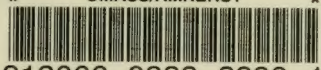


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THE EXPERIMENTS AT RIDGMONT.

ON the 23rd ult. a party of about 40 members of the Council, and the Scientific and Fruit Committees of the Royal Horticultural Society visited the Experimental Fruit Farm at Ridgmont, at the invitation of the Duke of Bedford, K.G., and the Director, Mr. Spencer Pickering, F.R.S.

The party was met at Ridgmont Station by Mr. Pickering, who conducted the members round the farm and explained the experiments. Later on they drove through the beautiful grounds, teeming with foreign animals and birds, which are quite at home there, to Woburn Abbey, where they were entertained at a luncheon over which Mr. Pickering presided.

An opportunity was then given for the members to see the principal rooms of the Abbey and the well-kept and finely timbered grounds which surround it.

The soil of the farm lies on Oxford clay, and a stiff, tenacious clay is present at a short distance below the surface throughout the experimental ground. Under certain circumstances the soil cracks badly, and, when it is dug late in the season, it is liable to remain in hard clods with considerable spaces between them, as could be seen

over much of the ground. It appears to contain little lime, and in places to be actually acid, if one may judge from the copious growth of Sheep Sorrel upon it.

On the whole, it appears to be a good fruit-growing soil, if thoroughly cultivated, though it would be easier to work if lime were added, and it would probably be improved in other ways by the addition of this substance.

The experiments have been most carefully planned, and they are carried out on an adequate scale. Though, before the conclusions could be accepted as of general applicability, they would require to be confirmed by further experiments on other types of soil. Experiments with living things are matters of very great difficulty, and interference with any one factor may often mean interference with others less easily seen, and perhaps not seen at all, resulting in a variety of changes which may or may not affect the final result. But at Ridgmont great care has been taken to plan all the experiments so as to ascertain the value of each known factor in reaching the result. Some of the results obtained have been startling in their apparent contradiction of accepted practice, not less to those who conceived the experiments than to the fruit-grower. In other cases it has been conclusively proved that different results follow similar practice when different varieties, say, of Apples, are concerned. Here it is apparent, as all observant fruit-growers know, that the cultivation of different varieties calls for modifications of general method, and it is quite probable that the question of varietal differences explains many of the apparent contradictions in practice advocated by different fruit-growers.

The first group of plots is intended to demonstrate the manner in which farmers might arrange fruit plots to the best advantage. Since they have reached good growth, they have given an average return of £30 per acre per annum. It may be mentioned in passing that it was found that the cultivation of vegetables and fruit in separate plots gave, over a series of years, better results than when they were intermixed.

The bad effects of Grass in orchards are well demonstrated in these experiments, though the actual reason for such effects is still to seek. It does not appear to be due to drying out, to check of free circulation of air, or to the robbing of the soil of plant food, as numerous interesting experiments have shown. The trees growing in grass, whether they be on the Paradise or Crab stock, are dwarfed, and their stems have a less circumference; the foliage is often yellowish and the fruit very brightly coloured; finally the trees die. Generally speaking, the ill effect is most marked upon quite young trees, but if it has not become too marked, the trees begin to recover when the grass is partly or entirely removed. On the other hand, grassing down after even 12 years' growth in cultivated soil produces a markedly adverse effect in some cases. Where the Grass has been allowed to grow gradually over the planted area, as it was often allowed to do in old times, the result has not been nearly so bad as where the land was sown down immediately.

It is important to note here, however, that some varieties of Apples show the evil results less than others, though all show it at Woburn to some extent.

THE QUESTION OF PRUNING.

The experience at Woburn has been all in favour of pruning in the winter the planting is done. If the pruning is left for a season, the growth in the first year is very weakly, and the trees frequently die. Where pruning was done, at no matter what time of year the planting was done, better results have followed.

Hard pruning carried out every year (no matter at what time) has been found to materially reduce the size of the tree and its yield, and not to increase the size of the fruits. The meaning to be attached to the terms "hard," "moderate," and "light" pruning is perhaps not clear, but, as was very evident, it is better to prune some varieties during the first few years of their growth, such as Stirling Castle, for instance, and other precocious varieties.

It cannot be argued from these experiments that a tree should never be pruned, but, it would seem that, other things being equal, a tree left entirely unpruned will be, at the age of 16 years, larger than one that has been hard pruned every year.

There are, of course, as the experimenters realise, many questions to be considered in deciding whether to prune or not to prune, and here the only questions are as to the size of the tree and its yield. Various interpretations may be placed upon the old saying: "Growth follows the knife," and upon the interpretation given depends whether we regard the results as opposed to accepted ideas or in accord with them.

ROOT PRUNING.

Trees root-pruned every year were nearly or quite dead; those root-pruned in alternate years were rather better; those every fourth year better still; but, though for a time perhaps rather more fruitful than those not root-pruned, they were less vigorous. Root-pruning acts as a severe check on growth, it is quite evident, but no tree that could be judged to need root-pruning was observed on the farm.

PLANTING.

All growers know the value of firm planting, but most believe that, if the method is carried to the extreme, the results are sure to be bad. At Woburn the greatest success is obtained when the soil is rammed firm around the trees with an iron rammer, 50 per cent. more growth being made. At least, in the case of young trees, the removal of fibrous roots before planting, or the doubling up of the roots, has a beneficial effect when attention is given to the trees during their subsequent growth.

So convinced are the experimenters at Woburn of the lack of necessity for the care usually taken in planting, and of the good results of ramming, that they will not tolerate upon the place a cultivator who plants in the ordinary way.

The general hope of the party was that all who have the opportunity will try the effect of this method of treating trees, as against the usual one, in other soils and situations.

MANURING.

At Woburn no benefit has been derived from the use of manures on Apples and

other fruit trees, but with Gooseberries farm-yard manure has proved indispensable.

SILVER LEAF IN PLUMS, &c.

A very large number of Plums and other trees have been inoculated with the mycelium of the fungus (*Stereum purpureum*), and in 80 per cent. of the cases the inoculation has been followed by the development of silver leaf, while in no case has the disease appeared in trees grown close by for comparison. As a rule, the death of the branch or tree affected was followed by the development of the fruit of the fungus.

The correctness of Professor Percival's conclusion, published some years ago, would seem, therefore, to be established, and we may regard the fungus *Stereum purpureum* as being the cause of silver-leaf disease.

It is most desirable that many of the experiments should be repeated under other soil—and general climatic conditions. This is being done in some places, the Woburn experiments having done perhaps as much, as Mr. Pickering said at luncheon, in suggesting the manner in which experiments might be carried out, and in awaking a questioning spirit, as in other ways. But there is room for many more, provided every care is taken to record conditions and to avoid interference with the results by careless planning and by conducting the experiments on an inadequate scale. Then possibly fruit-growing, well as it is done in the skilful hands of present-day growers, will be done yet better, and in any case we shall be well on the way to securing a firm basis on which to build a science of fruit-growing. J.

NEW OR NOTEWORTHY PLANTS.

NYMPHÆA BAUMII.*

THIS is the smallest of all typical *Nymphæas* in cultivation. The flowers are very small—about an inch in diameter. They are white, and remain open for six to eight hours during the day. The peduncle is from 4 inches to 1 foot long, slightly decreasing, rosy when young. The sepals are elliptical, pale yellow at the base and at the sides, green at the apex, white within, rosy in old flowers. The veins of the sepals are fine, pale, transparent, and the sepals are covered all over outside with fine violet stripes. Sepals and petals persist on the maturing fruit, enclosing it closely. The number of petals varies from 7 to 8; they are lanceolate, white: outer petals green with fine violet stripes on their ventral surfaces. The petals are shorter than the sepals, and are inserted near the base of the receptacle. Stamens 14 to 22 inserted near the middle of the receptacle, half as long as the petals; filaments, pale yellow, anthers dark yellow. Carpels 5 to 8, the upper third quite free, as the receptacle does not cover the carpels entirely. Fruit round. This species differs in this respect from all other *Nymphæas* known to me. The stigma is yellow, papillæ conical. The seeds are about a twenty-

fifth of an inch long, oval, violet when young, dark green on ripening, and not covered with longitudinal lines of hairs.

The leaves are leathery, about 1½ inch in diameter, nearly round, dark green above, nerves slightly paler. The underside is green, with a brown shade, covered all over with irregular dark violet blotches; veins dark green; lobes round. The petiole is very long and thread-like.

The plant is a native of South-west Africa, 18° longitude east of Greenwich, rare at Minesera on the Longa, in shallow water 8 inches to 1 foot deep; also as very small flowering bog plants at the margin of a swamp near the Longa. Temperature of water, 31° C. (= 88° F.). It grows together with *Nymphæa sulfurea*, one of the two, yellow African *Nymphæas*, which, unfortunately, like many other African species, have not yet been introduced. *N. Baumii* was collected in 1902 by H. Baum, curator of the Botanic Garden at Rostock. I have never succeeded in getting this species to cross with any other *Nymphæa*, and this is not to be wondered at, as it differs largely from all others in cultivation.

It would be of great value if more seeds and plants of *Nymphæas* of all parts of the world could be introduced, even if they seem to be of

hexagona *Lancei*. This *Iris* forms, with the true hexagona, one of the several curious pairs of American *Irises* (of which another instance is bracteata and Purdyi), the flowers of which can scarcely be distinguished, although the structural details of the botanically important parts of the plant, such as the ovary, the tube and the spathes, show that they belong to two distinct species. The large blue-purple, flattish flowers of *Lancei* are of considerable substance and great beauty, but the plant produces only a dwarf stem, and, therefore, hides its flowers low down among the leaves.

In the hybrid the tall stem of *fulva* is retained, and three to five flowers are borne in the axils of large leaves, which decrease in size from the base upwards. The flower is of the shape of *Lancei*, with spreading segments and somewhat pointed falls. The colour of the specimens shown at the meeting was a rich velvety, reddish—almost crimson—purple, becoming yellow towards the centre of the flower, the falls bearing a central, deep yellow slightly-raised ridge, which is distinctly pubescent. This last feature is noticeable in *Lancei* but not in *fulva*.

As far as I can tell at present, the plant is more floriferous than *fulva*, which, in some years, fails to give me any flowers at all.

Besides the above plant, I have another which is very similar, but which bears flowers of a deep blue-violet. Both come from a pod of seed that ripened in 1907. W. R. Dykes, Charterhouse, Godalming.

NATIVE HABITAT OF ASTER FALCONERI.*

WHEN my No. 14,302 was placed in Mr. Hutchinson's hands it had only a field label on it, and I omitted to explain that it was gathered by myself on open, grassy slopes below the Saskalli Pass, near the head waters of the left (eastern) branch of the Liddar River, that is, on the northern side of the Vale of Kashmir. Aitchison found it in abundance on the southern range (which divides the valley of Kashmir from the plains of the Punjab) in grassy meadows above Gulmarg. I have also seen it, but not in flower, on the Kashmir side of the Pir Punjab Pass, where it was found long ago by Falconer's collectors. It is found, I believe, though not usually now in quantity, as grazing has extended of late years enormously, just below the zone of Birch forest throughout the mountains which encircle the plateau (or vale) of Kashmir, and no doubt it extends westwards to Cleamba territory, but I have never seen or received it from the Himalaya eastward of the Ravi. It should be perfectly hardy in parts of these islands, but in its native haunts it has a clear, bright atmosphere for most of the year, while the underground part of the stems with the roots is under heavy snow from December to May. In May or June the snow is swept away or melted by the strong sun, which brings on the flowering shoots very rapidly. J. R. Drummond.



FIG. 1.—*NYMPHÆA BAUMII*, A SMALL SPECIES WITH WHITE FLOWERS.

common kind, as our knowledge and collections are far from complete. Seeds must be well cleaned before putting them in a small glass with a few drops of water, just enough to keep them moist. Fr. Henkel, Darmstadt, Landscape Gardener and Botanist.

IRIS × FULVALA.

THIS *Iris*, which was shown before the Royal Horticultural Society on June 21, and recommended for an Award of Merit by the Floral Committee, is interesting as being the first recorded hybrid of *Iris fulva*, a species from the swamps of the Southern United States, distinguished by its remarkable terra cotta colour and the drooping habit of its standards and falls. The fact that no other *Iris* approaches it in colour has led to repeated attempts to increase the size of the flower by hybridisation, but hitherto, apparently, these attempts have been fruitless.

The pollen parent of *fulvala* was the beautiful local species found by Lora La Mance in the mountains of Arkansas and usually known as

STRAWBERRY "UTILITY."

THIS is one of the newer varieties of Strawberries raised by Messrs. Laxton Bros. from a cross between a late-fruited variety and Waterloo. The fruits ripen a few days before those of Waterloo; they are wedged-shaped, very firm in texture, and possess a good flavour. Messrs. Laxton describe the plants as possessing free-cropping and vigorous-growing qualities. They consider it superior to Givon's Late Prolific, and recommend the variety as one to succeed the ordinary main crop of Strawberries. Our illustration represents fruits exhibited at the Royal Horticultural Society.

* See Gard. Chron., June 18, 1910.

* *NYMPHÆA BAUMII*, Rehnelt et Henkel, spec. nov.—Folia coriacea, integra, 2-3 cm. diam. cordato-orbicularia, sinu apertio lobis rotundatis, supra nitida viridia subtus pallidiosa violaceo-punctatis, nervis immersis. Sepala anguste elliptica viridia punctis strisque violaceis maculata, intus alba. Petala 7-8 lanceolato-elliptica, acuta, alba. Filamenta 14-20, petalis dimidio breviora, lutea, appendicibus brevibus albis. Stigma luteum radius 6.
Ex Africa aust. occidentalis introducta.
Syn. N. guineensis Engl., 1903, non guineensis Sch. et Th., 829; N. Hendelotii Planch. var. Nana Canard.
Publications: H. Baum Kunene-Sambesi Expedition; Prof. Warburg, Berlin; Gartenwelt, VI., 665, Canard; The Waterlilies, Buch der Nympheaceen, Henkel Rehnelt et Dittmann, p. 60.

THE ROSARY.

CULTURAL HINTS FOR JULY.

The hot weather has favoured Roses, and growers who have kept down insect pests by means of spraying should have good results. The buds inserted last season have grown freely, and the shoots will now need staking and tying. The top of these growths should be pinched out so as to cause the lower buds to break and form a bushy head.

Roses that have had their shoots pegged to the soil promise exceptionally well for blooming. Where there is a heavy crop of flowers, the plants should be assisted with a little liquid manure, which should be applied at half strength and when the soil is moist.

BUDDING ROSES.

It is now time to commence the work of budding Roses, selecting the standard and dwarf Briars first. The growth of Roses generally is much later this year than usual, and care must be exercised to see that both the stock and the scion are well ripened before budding is attempted. If the tips of unripened shoots are pinched, this will have the effect of hardening

Amongst the more desirable varieties of this type are *repens alba*, *atropurpurea*, *Blanche de Coubert*, *alba*, and *Mme. Geo. Bruant*. The Ayrshire Roses are also suitable for training as weeping standards; the best of these include *Dundee Rambler*, *Thoresbyana*, and *Félicité Perpétué*. Examine the general stock of Roses with a view to removing useless shoots, as those that remain will receive the benefit of additional light and air.

Tea and Noisette varieties planted against walls must not be allowed to suffer from drought at the roots; specimens that have finished flowering may be pruned a little and afforded some stimulant. Nothing is better for securing Roses to walls than strands of galvanized wire placed at 15 inches apart. The wire should be stretched through "eyes" placed at a little distance from the wall.

Roses in pots that have been forced and afterwards plunged or stood out-of-doors must be kept dry at the roots (but not allowed to flag) until September.

Roses planted out under glass, having been lightly pruned after flowering, will soon be breaking into new growth. Keep the plants free from green-fly and mildew, and apply doses of weak

being especially well suited for a high, south wall. *Isabella Sprunt* was sent out by Verschaffelt in 1866; it is of vigorous growth, quickly covering a wide wall-space if allowed to extend without much close pruning. A western aspect suits this variety. In the bud it is a beautiful light canary-yellow in colour.

Safrano was sent out as long ago as 1839, and is still one of the best as a button-hole Rose when in the bud. On a low south wall it grows and flowers to perfection. The colour is a bright apricot.

Mme. Alfred Carriere, distributed by Schwartz, has vigorous growth, and is well suited for a pillar or pergola, flowering early in June. Although catalogues describe it as a pure-white, I find it prettily flushed with pink in the bud state.

Among single varieties, none is so early and attractive as *Carmine Pillar*, sent out by G. Paul & Son in 1896. Its large, single blossoms are rosy-carmine, and in no way does it show to greater advantage than when trained loosely to a pillar or over a fence.

Never have I seen the Banksian varieties, yellow and white, flowering in such profusion as this season. They require a high south or east wall, liberal cultivation and very little pruning other than the removal of useless spray. No Rose that I know gives its blossoms in such quantities as the yellow form, and there is much charm in the deep yellow of its closely-formed, button-like flowers. This variety was introduced in 1823 by Damper, but it is seldom seen in private gardens. The white variety is distinctly shy blossoming, except under the most favourable circumstances of site and management.

Mme. Georges Bruant belongs to the *Rugosa* type, and is a pure-white, early-flowering form, especially sweet in its perfume. As a bush, growing in a suitable site—in the front of the shrubbery, for example—its early blossoms are appreciated.

Reve d'Or, sent out by Ducher in 1869, should be given a southern exposure on a high wall. Its deep-yellow blossoms are beautiful at the end of May. It should not be pruned severely.

Gardenia, as a pillar Rose for early-flowering, has few equals; its deep-yellow buds and pure-white blossoms are relieved by the deep-green, glossy foliage. *E. Molynaux*.

PLANT NOTES.

HELIOTROPES.

For some time past M. Bruant, of Poitiers, France, has devoted much attention to the raising of new varieties of *Heliotrope*, as well as many other classes of soft-wooded plants.

Visitors to the meeting of the Royal Horticultural Society on June 7 had an opportunity of seeing freely-flowering examples of several of these newer forms, one of which, *Favori*, was, under the name of *Favourite*, given an Award of Merit by the Floral Committee. This variety has massive heads of unusually large flowers, the colour being lilac-mauve with a lighter centre. The trusses possess the great merit of being exceptionally fragrant. Of the other varieties represented I was most impressed with *Plume de Paon*, first distributed by M. Bruant in 1908. This is one of the finest of the dark-coloured kinds, and a small, light centre to each flower serves to light up the dense, massive heads of bloom. *Réverie* has almost white flowers, which afford a marked contrast to those of *Plume de Paon*. Many of the more recent forms of *Heliotrope* are remarkable for their large, spreading heads of blossoms, and this may be largely owing to the influence, either directly or indirectly, of *Heliotropium incanum*, a species introduced from Peru by the late Mr. William Bull, of Chelsea, and distributed just 25 years ago. It is altogether a larger and bolder grower than the old *Cherry Pie* (*Heliotropium peruvianum*), while the foliage is particularly hoary. *W.*



FIG. 2.—STRAWBERRY "UTILITY."

the shoots and induce the formation of lateral shoots, thereby causing an increased flow of sap. When the bark parts freely from the wood, budding can be proceeded with. It will be better to select the scions from flowering shoots of plants cut back last year; should these not be available, use only the most prominent bottom eyes from ordinary shoots. Do the work of budding in cool, showery weather. If dry weather continues, the work should be done in the morning and evening, after supplying the roots of the stock, some days in advance, with a drenching of water. Make a clean incision in the stock, and be careful not to damage the bud. Raffia is the best binding material, and should be used when wet, keeping it in the water, in which the ends of the scions are placed. The budding of dwarfier stocks of *Manetti*, *De la Grifferae*, and stocks from *Briar* cuttings may be left over until the end of July or some time in August. The budding of the seedling *Briars* should follow the standards. Remove the soil a few inches from the stem and insert the bud just above the roots.

Varities of *Rosa rugosa* are suitable subjects for the shrubbery, with their dark-green foliage and showy flowers, followed later by the brilliant hips. *R. rugosa* may be budded as standards and made to assume a weeping form.

liquid manure to the roots with an occasional sprinkling of basic slag and bonemeal. Keep the ventilators open both day and night, and remove all flower-buds to conserve the energies of the plant.

Apply mulchings to the roots of newly-budded and other Roses during dry weather, and hoe the beds and borders frequently, so that the soil may be well aerated and moist. *J. D. G.*

ROSE KÖNIGIN CAROLA.

This H.T. variety, sent out by Turke in 1904, is one of the first in my collection to open its blossoms, which it did this year on May 30. The flowers last a long time in good condition and retain their satiny-rose colour well. The blooms, when fully expanded, contain a large number of petals, making huge flowers. The variety deserves the attention of Rose growers for garden decoration.

EARLY-FLOWERING ROSES.

The following varieties may not be new, but none of the newer sorts is more useful for early-flowering, as they all give an abundance of blossom quite early in the season. *Reine Marie Henriette*, sent out by Levet in 1873, is commonly known as the *Red Gloire de Dijon*; in colour it is a deep cherry-red. The plant has a vigorous growth and abundant blooming qualities,

MULCHING.

THIS is a familiar term in gardening, but the practice is not thoroughly understood by all who engage in it. Indeed, in many cases mulching is carried out mainly because it has become a rule. Little or no thought is given as to the conditions of the season and soil at the time of applying a mulch, or to the character of the material used for the purpose. In a general way a suitable mulch given at the proper season is beneficial, but mulching may be carried to excess, and it is then a means of harm rather than good. This applies to vine and Peach borders under glass, fruit trees trained to walls, or fruit trees in the open garden, also to vegetable crops.

Among the mistakes that are made is that of applying the mulch too early in the season. To cover the ground with a thickness of close, heavy manure before the ground has become warmed by the summer's sunshine is against the well-doing of the tree or plant. A warm, moist rooting-medium is necessary to fertility. Some growers think that, by mulching early in the season, moisture is conserved in the land, but they overlook the facts that warmth is quite as important a factor, and that a mulch is apt to exclude it.

In all cases light and porous materials should be used. A covering of suitable material about 2 inches in thickness over the roots does much to maintain the soil in a moist state, the full force of the sun is tempered, but sufficient warm air can penetrate. The ground, under such a covering, remains open and sweet in contrast with that where too great a thickness of solid dung is placed over it. Perhaps one of the best materials for mulching purposes is horse dung from a spent Mushroom bed, since, though still retaining some feeding properties, it is light and porous, and not unsightly. Even such a light covering as this is best withheld in a cool, moist summer like that of 1909. Therefore, it should not be applied until the necessity actually arises. In cases where there is no choice of material for mulching and rotten dung has to be used, it should be employed sparingly. By forking it over lightly as required it may be prevented from settling down into a solid mass. R. P.

The Week's Work.

THE FLOWER GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Herefordshire

Herbaceous border.—Everything should be done to make the flower border neat and tidy. Remove the old flower-stems and any unsightly shoots. Place stakes where necessary, and secure any shoots that need tying. Plants that are dry at the roots should be given a thorough soaking of water and afterwards a mulch. Keep down weeds and promote a fine tilth on the surface by means of the Dutch hoe: hand-weeding must be practised where the hoe cannot be employed. The present offers a suitable time for the dividing of the Fritillaria or Crown Imperial. Fritillarias continue to grow well for a number of years if undisturbed, but it is advantageous sometimes to thin them, and division is one of the easiest means of increasing the stock. Many plants that flower in the spring may be increased at this season by means of cuttings. Shoots of Aubrietia, Arabis, Lithospermum prostratum, Alyssum, and Iberis will root readily in a sandy compost. Select a shady position, keeping the cuttings close until rooted, hand-lights placed under a north wall being suitable for the purpose. After Pinks have finished flowering, they may also be increased in this manner.

The water-garden.—The hot, sunny weather has been especially suited to Nymphæas; never before have I seen them in better condition at this season. The foliage, too, seems to be very little affected this year by aphids, although this pest may become prevalent later, in which case some insecticide must be used in the evening, when the flowers are closed. There is a splendid selection of colour in the flowers of Nymphæas,

and where a limited water area is available, only the very finest should be included. When the plants are in full bloom is a favourable opportunity for considering any alteration in the scheme of planting when the proper season arrives. Where large tracts of water are available, the commoner forms, such as Nymphæa alba and its variety candidissima, N. Laydekeri, N. Marliacea, N. carnea, and N. chromatella should be included. The Japanese Irises I. Kämpferi are beginning to unfold their gorgeous flowers, and these, together with the Astilbes (Spiræas), are creating a fine effect in the water-garden.

Roses.—Many of the climbing varieties will need a thorough overhauling. All faded flowers should be removed, and, if the flowering of any particular variety is over, cut out the old flowering shoots, so that the young growths may be trained in their places. Be careful not to injure the stout basal growths, as these will form the flowering branches of next season. Other kinds of Roses that have passed out of flower will need syringing with an insecticide. A simple and effective wash can be made with soft soap and water, using half an ounce of soap in each gallon of water. In the case of hybrid perpetual Roses, should extra fine blooms be required, disbudding must be resorted to, and stimulants applied at the roots. The appearance of the Rose-garden will be enhanced if the plants are gone over at least once a week, and the petals of faded blooms removed before they fall. At the same time rake over the surface of the soil.

The wild garden.—It will be necessary now to mow the grass, otherwise the flowering plants may be smothered and their growth checked. Endeavour to have the wild garden as natural and informal in appearance as possible, and for this reason planting should always be done in irregular patches. Weeds must be kept down by means of the hoe. Take care when raking up the mown grass not to injure the stems of any of the shrubs or other plants.

THE KITCHEN GARDEN.

By JOHN DUNN, Kitchen Garden Foreman, Royal Gardens, Windsor.

Leeks.—Those which were planted in trenches in the beginning of May should receive liberal supplies of liquid manure from the farmyard. If this is not available, the trenches may be freely dusted with guano, following this with an application of clear water, which should be exposed to the sun for some time before use. Earthing-up should never take place before the plants have been given sufficient moisture at the root. The soil must be worked carefully round the stems of the plants, and this process continued from time to time until the trench is filled level with the surrounding bed.

Onions.—Plants which are to grow to a large size should now receive liberal supplies of artificial manure, but this should not be continued late in the season, or the bulbs may split. Whenever water is necessary a good soaking should be given in preference to frequent light waterings.

Shallots.—Those planted early in the year will now be ready for lifting and placing under cover where plenty of air can circulate about them. When perfectly dry they may be stored away, selecting the hardest and best matured bulbs for keeping until spring.

French Beans.—Seed should be sown now on some sheltered border, where the plants can be protected from September frosts, to afford supplies late in autumn. Cold frames recently occupied with Potatoes and other early vegetables may be prepared, and the first sowing of French Beans made in them about the middle of July and at weekly intervals until the middle of August, when, if heated pits are available, a good sowing should be made for the latest supplies.

Parsley.—Parsley sown for winter use should now be ready for thinning, leaving the plants at 6 inches apart. In September the whole plantation should be cut close to the ground to encourage short stems which will stand the winter. The young seedlings removed from the rows should be transplanted into a cold frame for use in severe weather. The soil should be trodden tightly before planting, and after planting the whole bed should be carefully watered. The lights may be stored away until the approach of winter weather.

Turnips.—A sowing of Turnips may be made on a north border or some other situation on

which the sun does not shine during the hottest part of the day. Turnips are best when drawn from the bed as required for us, therefore frequent sowings should be made. Thin the plants to 9 inches apart as soon as they are large enough to handle. Sow again at about the middle of July for autumn and winter use. Green-top Stone, Red Globe, and Golden Ball are good varieties for winter use. The Turnip fly, which is so troublesome in dry weather, may be kept in check by frequent dustings of wood ashes applied when the foliage is damp.

Lettuces.—Make a small sowing of Lettuce every 10 days, choosing a rich soil on a shady border. Frequent waterings may be necessary to ensure quick growth. Mammoth White Cos, Iceberg, and Pearl are good summer varieties. Continuity is good for hot seasons.

Radishes.—A sowing should be made in a cool situation, and the plants must be watered frequently. Sow the seeds thinly. The best place to grow Radishes in summer is in box frames behind a north wall. The soil should be light and rich.

THE APIARY.

By CHLORIS.

Queen raising.—Sufficient attention is not given to this important branch of apiculture by amateur beekeepers. To be successful in bee-keeping every colony must be headed by a young and prolific queen. No stock should include a queen that has passed her second season. By raising queens from well-selected colonies a supply of fertile queens may always be at hand to replace those that have passed their most profitable period, or to take the place of those that have been injured or accidentally killed. During the height of the honey season the loss by mortality amongst bees is very great, and the loss of the queen will soon react on the prosperity of a hive. Very much depends upon the queen: her offspring must be numerous, hard-working, and hardy. The hive which is set aside for raising the queens should be fitted up with foundation of worker base, and, to attain excellence, another equally good colony should be fitted up to produce drones. A few combs may be inserted in the middle of the brood chamber, and, if the bees are well fed with syrup, the queen will rapidly fill these with drone eggs. When all is ready, insert a new frame containing foundation with worker base, stimulate, and in three days remove the queen, keeping her for use, where a less valuable queen can be sacrificed. Take care to remove all combs containing unsealed brood; these can be placed in weak colonies. These latter combs are removed in order to prevent the bees from raising queens from larvæ more than three days old. The bees will raise queens from the eggs in the new comb, the grubs being well fed from the time of hatching. It may be expected that from 10 to 25 queen cells will be started, and in nine days these will be sealed over. If there are not sufficient cells, another comb of eggs from the same queen may be added, and on removing the queen cells, the bees, being queenless, will at once again set to work to raise queens. Great care must be taken not to shake the frame, as is commonly done in ridding the combs of the bees, for this will kill or injure the queens. The bees are best brushed off with a quill; nothing irritates bees more than the use of a brush. Some beekeepers are at a loss to understand the meaning of a nucleus colony. It is really a colony of bees consisting of three or four combs; sometimes not more than two or three combs are sufficient—the two outer ones containing honey and pollen and the middle one brood. A queen cell is carefully secured in a hole in the centre of the comb with pins. These combs have all been taken from a well-stocked hive, and the adhering bees will raise the brood and maintain the requisite temperature in the hive. Wrap up each nucleus well with quilts and take care to have an entrance which will only permit one bee to pass at a time. This will tend to prevent robbing. In removing the queen cells, cut the comb well away from the actual queen cells, and do not expose the cell more than is necessary to either cold or the sun's heat. To ensure success, the work must be done expeditiously. In about two weeks time, the queens will commence laying, and they will then be ready for transferring to their new hive. The proper method of introducing the queen to a colony will be described in a further note.

THE HARDY FRUIT GARDEN.

By A. R. SEARLE, Gardener to the Marquis of NORTHAMPTON, Castle Ashby, Northamptonshire.

Strawberries.—Where Strawberry plants are required for planting in the open quarters during August or early in September, the runners should be layered as soon as they are procurable. Pots 3 or 3½ inches in diameter are the most suitable, and should be filled with fresh loam made moderately firm. A few rough pieces of loam at the bottom of the pots will afford sufficient drainage. If the loam be considered poor, a sprinkling of bone-meal should be mixed with it. The runners should be pegged in the centre of the pots, and it will be necessary to keep them well supplied with water and to sprinkle the plantlets each afternoon with a rose-can during dry weather, until they are established. If the pots are partly plunged in clumps or rows, this will prevent them drying too quickly, and the plants may be more easily attended to when so placed. In these gardens the Strawberry season will be a short one, and the fruits generally on the small side, owing to the excessively hot and dry weather during the swelling of the "berries."

Perpetual-fruited varieties.—Those required to furnish a successional supply of fruit after the main crop is over should have all the runners and flower-spikes removed till within six weeks or thereabouts from the time the fruits are required. All recently-planted Strawberries that have been forced (as mentioned in the Calendar for April 16) should have the runners removed and the soil round about them should be frequently stirred with the hoe. These plants will produce some very good autumn fruits if occasional applications of liquid manure water are given them.

Figs.—The trees are now growing freely, and they need the shoots disbudded and the fruits thinned if a heavy crop has formed. The shoots should be thinned gradually in order that the trees may not receive a severe check. Avoid overcrowding the growths or the wood will not mature properly. Remove the extra-strong shoots and retain those of moderate strength that are short-jointed. Trees growing in restricted and properly-prepared borders and carrying good crops of fruits will require liberal waterings of liquid manure while the fruits are swelling, but the manure water must be discontinued immediately the fruits show signs of ripening. No stimulants must be given to trees that are making a quantity of gross shoots or those that have failed to crop. Continue to fasten in the shoots as they develop, but do not stop them. Red spider is sometimes present in the foliage if the roots are allowed to suffer from drought. Where this is the case, the foliage should be syringed vigorously with clear water.

PLANTS UNDER GLASS.

By JOHN DONOGHUE, Gardener to JOSEPH PICKERSGILL, Esq., Bardon Hill, Westwood, Yorkshire.

Selaginella.—The Selaginellas succeed best in a mixture of rich porous loam and lumpy peat. They are easily propagated by portions of the stem. Place from four to six pieces into small, shallow pans and stand the pans in a shady position in the intermediate stove. The plants are of quick growth, and specimens of a useful size may be soon obtained by this means. *S. cæsia* does best when exposed to the light and grown near to the glass, as sunlight is needed to develop the tints seen in this variety. The others should be given shade. *S. cæsia arborea* has an exceptionally high colour and forms a pretty contrast with green species when used amongst dwarf plants for grouping.

Climbing plants.—These will soon afford a brilliant display of bloom. The plants must receive regular attention with respect to watering and be given a sprinkling of chemical fertiliser. Thin out the weak and undesirable shoots so that the other occupants of the plant-houses may receive the necessary amount of light. Creepers planted out in borders must be supplied at intervals with top-dressings, and be given thorough soakings of water. Camellias form ideal wall-plants in the greenhouse or conservatory. The trees are well furnished with their new season's growth and will need an occasional syringing with an insecticide to keep the plants clear of pests.

Francoa ramosa.—This plant forms a useful object for greenhouse or conservatory decoration.

It does best when cultivated as a specimen plant in pots of from 7 to 8 inches in diameter. Under such treatment I have obtained from 12 to 18 flower-spikes on a single plant. As soon as the flower-spikes are observed, afford liberal doses of liquid manure at alternate waterings, and this stimulant may be continued until the flowers are showing colour. If desired, *Francoas* may be raised from seed sown during the spring, but this method of propagation is not to be preferred to cuttings. The shoots should be inserted singly, into small pots, as soon as the plants pass out of bloom. Allow the cuttings to remain in a cool frame until the weather becomes cold, when they must be afforded a position in the cool greenhouse.

Acalypha.—Specimen plants of *Acalypha* which have become unsightly through losing the bottom foliage may be notched and mossed around the stems with a view to ringing them. If kept close and moist for a few weeks, the stem at the notched portion will soon form roots, and may then be severed at that part. After they are suitably potted, afford shade until they are well established, and then expose them gradually to the sunlight to become well ripened. The old root-stocks may be reserved for propagating purposes.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Surrey.

Cattleya.—*C. Warscewiczii* (gigas) is a free-growing species in suitable conditions. At the present season, when many plants are in bloom, they should be kept in a moderately dry atmosphere, and the flowers will then last a considerable time in perfection. Plants which are still growing should be placed within a few inches of the roof glass, where there is most light, as the action of light will tend to make the plants floriferous. These remarks apply also to plants of *C. Dowiana* and *C. D. aurea* now showing their flower sheaths. The best time to repot plants of *C. Warscewiczii* is about a fortnight after the flowers fade, as, at that time, the new pseudo-bulbs produce from their bases a number of roots that will readily enter the new compost; while, if the operation is left till the roots are present, many of these are likely to get broken. After the flowering stage, stand the plants in a position where they will be exposed to plenty of light and air. Afford only enough water to keep the old roots from perishing; a slight shrivelling of the pseudo-bulbs may be allowed, as they will readily plump again to their normal condition when growth recommences. Plants of *C. Mossii*, *C. Mendelii*, and *Lælia tenebrosa*, many hybrid *Cattleyas* and *Lælio-Cattleyas* which have passed their flowering stage, also plants of *C. Bowringiana*, and its hybrids now starting to grow, may be repotted at this season. *C. Lawrenceana* should be placed in a light position in the Mexican house, with *Lælia anceps*. Fresh material may be afforded to this plant when the growths have fairly started, using the best *Osmunda* and *Polypodium* fibres in equal parts, with plenty of small crocks intermixed. Remove all unnecessary back pseudo-bulbs, so that each plant may be placed in a pot suitable to its requirements for several seasons, and pot firmly. All the plants in the *Cattleya* house will require abundance of ventilation, weather permitting, by means of the lower ventilators; a thorough damping-down should be given in the morning, and again early in the afternoon, so as to produce a good growing temperature several hours before the sun ceases to shine on the roof. The atmosphere may be allowed to become comparatively dry for a few hours during the middle of the day.

Dendrobium albo-sanguineum.—Suspended to the roof, in a light position over the *Cattleyas*, is the best place, we have found, for the rather difficult *Dendrobium albo-sanguineum*. The plants of this species have their new growths well advanced, and, before the roots push out from their base, repotting should be done, using the same potting mixture as advised for the *Cattleyas*. From the present time until growth is completed, copious waterings will be necessary. Red spider being the chief enemy of this plant, the leaves should be sponged over at least once each week.

Odontoglossum pulchellum.—In the rather cooler temperature of the intermediate house

plants of this pretty white species are commencing to grow and may be reported. Afford plenty of drainage material, and use a compost of *Osmunda* fibre, *Polypodium* fibre, and *Sphagnum*-moss in equal parts. Cut the moss up much smaller than the fibres, so that it will intermix well with them, and add plenty of small crocks. Fix the plant just above the rim of the pot, and work the soil in rather firmly around the base of the pseudo-bulbs. The plant, when repotted into this new kind of compost, generally takes a long time to re-establish itself, but it will, in time, reward the grower for his care and patience. After potting, it is advisable to stand the plant at the warm end of the house. Keep the surface of the compost just moist, and protect it carefully from strong light and all sunshine.

Masdevallia tovarensis.—This pure white *Masdevallia* thrives well along with the *Odontoglossums*. The plants have now recovered from their disturbance by repotting, and are making many new leaves. Afford plenty of water to the roots, but do not let the compost be constantly saturated. Plants that grow in moderate shade thrive better than those which are in more exposed positions.

Palumbina candida grows and blooms freely when suspended in a shallow pan in the intermediate house.

FRUITS UNDER GLASS.

By B. GOODACRE, Gardener to Sir Ernest Cassel, G.C.B., Moulton Paddocks, Newmarket.

Strawberries.—Young plants which were put out last year to provide layers should have the flower-spikes pinched out. The runners should be pinched when large enough, leaving one runner to each plant.

Layering Strawberries.—The layering of Strawberry runners to provide plants for forcing may now be taken in hand. The runners may either be layered into small pots or direct into the fruiting pots. There is less work in the latter method, and the results are quite satisfactory. The best runners are produced by young plants grown specially for stock purposes, therefore a few rows should be planted every year for this purpose.

Layering in small pots.—If this method is adopted, the necessary number of pots should be filled in readiness, using good, loamy soil which has been passed through a sieve with a half-inch mesh, to remove stones. Fill the pots rather loosely, so that the runners may be pressed well down, after which the soil may be made firm to prevent the young plant from being blown out of the pot before it has established itself in the soil. Stand the pots close together between the rows until they are ready to be detached from the parent plant, and give daily attention to watering. Keep all runners pinched back as they appear, and also any that spring from the old plants.

Layering in fruiting pots.—For the earliest crops, pots of 5 inches in diameter are quite large enough, and others 6 or 6½ inches may be used for general purposes. These should be washed clean and crocked carefully, so as to ensure thorough drainage. Prepare a compost of roughly-chopped, fibrous loam five parts, well-decayed manure one part, and a 4-inch potful of bone-meal, and another of soot to each barrowload of soil, also a good sprinkling of old mortar rubble. Turn this mixture several times in order to have the manure thoroughly incorporated with the other ingredients. Fill the pots to within 1 inch of the rim, using a rammer. The plants are most successful in a firm rooting medium, but if the compost is inclined to be too moist, or it is stiff loam, severe ramming causes the plants to get water-logged. Make a small hole in the centre of each pot with a trowel, insert the runner, and make it quite firm. The young plants will benefit by spraying with a rose can when the weather is dry, but watering must be done carefully until the pots are well filled with roots. When it is seen that the plants are well established, they may be removed to an open position and placed on a base composed of coal ashes a few inches deep. Give regular attention to watering and syringing, and feed the plants with liquid manure when they are well rooted, remembering that next year's crop of fruit is largely dependent on the autumn treatment. Place the plants further apart as growth advances, so that they are thoroughly exposed to sun and air.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editors to see.

APPOINTMENTS FOR JULY.

SATURDAY, JULY 2—Windsor, Eton and District Rose Soc. Sh. Soc. Franc. d'Hort. de Londres meet. Sutton Rose Sh.

TUESDAY, JULY 5—Roy. Hort. Soc. Summer Exh. at Holland House, Kensington (2 days). Scottish Hort. Assoc. meet. British Gard. Assoc. Ex. Council meet. Southampton Fl. Sh. (2 days).

WEDNESDAY, JULY 6—Reigate Rose Sh. Croydon Fl. Sh. Bath Rose Sh. (2 days). Hanley Park, Staffordshire (2 days).

THURSDAY, JULY 7—Ipswich and E. of England Hort. Soc. Summer Sh. Woman's Agr. and Hort. Intern. Union.

FRIDAY, JULY 8—Nat. Rose Soc. Sh. at Royal Bot. Gdns., Regent's Park.

MONDAY, JULY 11—United Hort. Ben. & Prov. Soc. Com. meet.

TUESDAY, JULY 12—Nat. Sweet Pea Soc. Exh. at R.H.S. Hall, Westminster (2 days). Wolverhampton Floral Sh. (3 days).

WEDNESDAY, JULY 13—Nat. Rose Soc. Sh. at Salisbury. Teddington Fl. Sh. Uxbridge Fl. Sh. Derby Agr. and Hort. Soc. Sh. (2 days).

THURSDAY, JULY 14—Finchley Hort. Soc. Sh.

TUESDAY, JULY 19—Royal Hort. Soc. Coms. meet. (Lecture at 3 p.m. by Mr. Fred. Enock on "Insects Affecting Crops.") Roy. Scottish Arboricultural Soc. Forestry Exh. at Dumfries (2 days).

WEDNESDAY, JULY 20—Cardiff & County Hort. Soc. Sh. (2 days). Liverpool Sweet Pea and Rose Sh. (2 days).

FRIDAY, JULY 22—Handsworth Fl. Sh. (2 days).

TUESDAY, JULY 26—Nat. Carnation and Picotee Soc. Exh. at R.H.S. Hall, Westminster. Yorkshire Agr. Soc. Intern. Sh. at Roundhay, Leeds (3 days).

WEDNESDAY, JULY 27—Leamington Fl. Sh. (2 days). Southampton Carnation and Sweet Pea Sh. Sweet Pea Exh. Borough of Gillingham, Kent (2 days).

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich—62.2°.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, June 29 (6 P.M.): Max. 64°; Min. 50°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, June 30 (10 A.M.): Bar. 29.4; Temp. 61°; Weather—Showery.

PROVINCES.—Wednesday, June 29: Max. 61° Cambridge; Min. 54° Yorkshire.

SALES FOR THE ENSUING WEEK.

TUESDAY—Orchids at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 1.

Employers, whether nurserymen, market- or head gardeners, are confronted with the problem of the supply of efficient labour. In America this problem seems to have reached an acute stage, and our contemporary, the *Florists' Exchange*, has dealt with it recently in a leading article. It appears that, in all parts of America, florists, nurserymen and seedsmen are crying out about the shortage of experienced assistants, and our contemporary adds that, "admittedly there is a shortage of practical men, which is yearly becoming of more and more serious import," and summarises the situation thus:—

"Here and there individual employers may be fortunate enough to have so built up their business as to be in a position where they are never bothered by a shortage of this kind (skilled, interested labour). Such men are to be commended because, wise in their generation, they have exercised foresight, and have continued to train new men which they could promote as the business expanded.

"As we see the question, it is largely one of

employer and method. Too many employers think it a bore and a loss of time to teach beginners.

"Yet it is the young blood which you yourself carefully educate in your particular line, interest, and treat generously which is going to be your mainstay as your requirements enlarge.

"Mere labourers can be had at any time; skilled labour is painfully short in almost every trade; ours is not the only sufferer, by any means.

"Those employers who will give boys a liberal training are the best off, and even they will have many a discouragement. This is so self-evident as not to require debate.

"But in the meantime the question is, how to obtain an adequate supply of skilled labour for this and next year's requirements."

Does not this exactly describe the condition of affairs in our own country, so far as the difficulty of securing interested workers is concerned? It is quite the fashion nowadays to blame the men and boys for preferring football and sport to business; but there is another side to the shield, and the American writer expresses it well when he says it is largely a question of employer and method. In few trades are the hours so long as in gardening, and in no trade is the remuneration so low. These two vital matters doubtless tend to deter the best types of boys from becoming gardeners. Sixty hours, which is quite general in the trade, is much too long a week, with Sunday duties in addition. Then as to wages: after serving for four or five years, a young gardener can rarely obtain more than 20s. to 22s. a week, and he has often to remain many years at this wage. In a country place with a bothy, it may be claimed that this is reasonable, but thousands of nursery gardeners living in towns get no more money. Their prospects are poor and the chances of their settling down and getting married are indeed remote.

Let employers recognise the necessity for improvement in the gardener's prospects and they will immediately attract a better class of apprentices, and in this way raise the general standard of efficiency. It would pay in the long run, for, with the promise of a better career and with the powerful spur of ambition, the right men would not be lacking. The problem is, of course, inextricably bound up with the two interests—the employer and the employed; but we feel that, if any marked improvement is to take place, the first step must be made by the employers. Where such a step has been taken and we know of not a few instances in which it has been done—the difficulty of the labour problem has been greatly reduced. Sooner or later the questions of hours and remuneration must be faced, and we hope that employers who are in a position to give a lead on the lines we have indicated will take this step. Others will follow their lead. No business of any magnitude can be built up without the assistance of first-rate subordinates; therefore, it is to the advantage of those who desire large businesses to exert themselves to the utmost to secure efficient labour. We may be told that the profits of the seed and nursery trades will not admit of more expenditure on wages. In the long run we do not believe that increase of wages would mean reduced profits. Efficient service would more than compensate the employer for his increased outlay, and, in the new conditions, employers would have no reason to tolerate those incapable of rendering such service.

OUR SUPPLEMENTARY ILLUSTRATION shows the remarkable tree of Evergreen Oak (*Quercus Ilex*) at Wilton House, referred to in the description of the gardens which appeared in the issue for June 11. The date when this tree was planted is not known, but the specimen must be several centuries old, for it is described in Loudon's *Arboretum et Fruticetum Britannicum* (published in 1838), as having, in 1816, a trunk measuring 10 feet in circumference. Since then the tree has grown considerably, for it now measures 18 feet at a short distance from the ground. The tree covers a remarkably large area, and the more important branches are supported by stout props. It is still in good health, and promises to last for many years. Those parts that have shown decay have been carefully tended, and water is prevented from lodging in them by coverings of sheet zinc, as may be seen in the picture. Some of the larger ramifications of the trunk are secured together by means of stout chains. At the foot of the bole is a paving of stones placed on their ends, and in the summer time seats are arranged on this paving, which is specially suitable because it does not prevent the rain from passing through to the roots. Tradition states that Sir PHILIP SYDNEY composed *Arcadia* under the seclusion of this delightful old tree. The gardener, Mr. THOMAS CHALLIS, is seen standing beneath the tree, which he has had in his care for more than half a century.

ROYAL HORTICULTURAL SOCIETY.—The Council have again accepted from the General Dutch Bulb Growers' Society, at Haarlem, prizes for bulbous Hyacinths, to be competed for on March 14 and 15, 1911. There will be four classes for amateurs and two for trade growers. The amateur classes are for 18 Hyacinths, distinct; 12 Hyacinths, distinct; six Hyacinths, distinct; and four pans containing Hyacinths, 10 roots of one variety in each pan, the blooms of each pan to be of a distinctly different colour to those of the other three pans. The bulbs need not have been actually grown in the pans in which they are shown. For trade growers, the classes are:—Collection of 100 Hyacinths in 25 named varieties, four blooms of each variety, grown in pots or glasses, and a collection of 120 Hyacinths in 12 varieties in pans, 10 roots of one variety in each pan. All bulbs must have been forced entirely in Great Britain or Ireland, and all varieties must be correctly named. In the amateurs' classes money prizes are offered; the traders will be given the Gold Medal of the General Bulb Growers' Society at Haarlem.

THEIR MAJESTIES AND THE ROYAL HORTICULTURAL SOCIETY.—We are glad to receive the following information from the Rev. W. WILKS:—"Your readers, and especially those who are Fellows of the R.H.S., will learn with much pleasure that their Imperial Majesties the KING and QUEEN have consented to become patrons of this Society."

R.H.S. SUMMER SHOW.—We would remind our readers that this show is to be again held at Holland House, Kensington, by the kind invitation of MARY Countess of ILCHESTER, on July 5 and 6. The exhibits will include Orchids, Roses and herbaceous flowers, rock, Alpine and foliage plants, fruit and vegetables. Horticultural sundries, which are excluded from most of the shows owing to considerations of space, will be shown in considerable numbers.

THE JAPAN-BRITISH EXHIBITION.—The Council of the Royal Horticultural Society having decided to award silver cups to the value of about £100 to garden exhibits in the Japanese section of the Japan-British Exhibition, the judging took place on Thursday last. There will be a

complimentary luncheon on the second day (July 6) of the Society's summer show in the tent at Holland House, Kensington, to welcome Japanese horticulturists visiting London. About 100 guests are expected, and among those to be present are the Japanese Ambassador, Baron OURA, Lord BLYTH, Lord REDESDALE, Sir WILLIAM THISTLETON-DYER, Sir DANIEL MORRIS, and Mr. Commissioner-General HIKOJIRA WADA.

THE GREAT ROSE SHOW OF THE YEAR.—

Respecting the Metropolitan exhibition of the National Rose Society, to be held on the 8th inst., in the Royal Botanic Society's Gardens, Regent's Park, Mr. EDWARD MAWLEY, the hon. sec., writes us as follows:—"I venture to predict that the coming National Rose Society's Exhibition will be the finest the Society has held for some years, and for the following reasons: In most localities there has been plenty of rain, and, as a rule, moderate temperatures have prevailed, both of which conditions favour the gradual development and, consequently, the increased size and perfection of the blooms. Then, again, the season being an early one, and the date of the show later than usual, all the earliest blooms, which are generally inferior owing to late frosts, &c., will be over, and those which follow—generally the choicest of the year—will be available. These two circumstances will also allow of Roses from all parts of the country being more generally represented than in recent years, when the fixture has been earlier and the season unusually late. Among the new features at the exhibition may be mentioned a class for bedding Roses shown in baskets, which is likely to be an attractive one, and to bring out the suitability of the different varieties exhibited, for massing together in large or small beds far better than when shown in the ordinary way. The new seedling Roses are always the most popular feature of the show. This year, to prevent crowding, and to allow of these new Roses being comfortably inspected, they will be exhibited for the first time in a separate tent. There are now so many good raisers of Roses in the British Isles and elsewhere, and the season, as before stated, has been so favourable, that the display of these novelties is likely this year to be unusually large, and the varieties staged for the Gold Medal of the Society will, it may be predicted, be exhibited in unusually good form."

NATIONAL CHRYSANTHEMUM SOCIETY.—The annual outing will take place on Monday, July 25, when a visit will be paid to Tring Park, Hertfordshire, by kind permission of Lord ROTHSCHILD. Tickets, price 10s. 6d. each (inclusive of railway fares, brakes, lunch and tea), may be obtained from the secretary, Mr. RICHARD A. WITTY, 72, Savernake Road, Gospel Oak, London, N.W. All applications for tickets must reach the secretary by July 20.

ARRANGEMENTS FOR THE INTERNATIONAL SHOW, 1912.—We understand that the International Horticultural Exhibition which is now being promoted will be opened on May 22, 1912, and it will remain open eight days. These days will include a portion of Whitsun week, from Whit-Monday until the following Thursday. An admirable site in the west of London, providing an area of something like 30 acres, has been secured, and it is expected that the lease will be signed at an early date. It is intended to appoint sub-committees to represent various districts in these islands for the purpose of raising subscriptions and guarantees. The question of privileges to be granted to guarantors and subscribers is now under consideration by the executive committee, and particulars will be published later.

WINDSOR ROSE SHOW.—The 19th annual show takes place to-day (Saturday) on the Slopes at Windsor Castle. Eight cups are offered for competition, including the challenge cup that was offered by his late Majesty King EDWARD VII., the Windsor Challenge Cup, the Princess Alexis Dolgorouki's Challenge Cup, and the Mayoress Challenge Cup. Besides these, the prizes include three medals and money to the value of over £100.

NATIONAL AMATEUR GARDENERS' ASSOCIATION.—An exhibition of flowers, fruit, vegetables, &c., will be held at the Royal Botanic Gardens, Regent's Park, N.W., on Saturday, July 9. There will be competitions for Roses, Sweet Peas, Violas, table decorations, &c. A gold medal is offered in the Rose classes. Tickets for the exhibition and full particulars of the monthly meetings and lectures of the Association may be obtained from the hon. sec., Mr. FREDERICK A. POULTON, "Rosemount," Park Road, New Barnet.

FLOWERS IN SEASON.—A few days before the earliest of the summer exhibitions took place. Mr. T. H. BOLTON, of Powderham Gardens, Exeter, sent us some very fine flowers of many of the newer varieties of Sweet Peas, which he said would be certain to be shown in most of the competitive classes this season. He has found that several varieties exhibited last season are insufficiently distinct to be distinguished from existing sorts. Mr. BOLTON, however, states that amongst the striped varieties, Senator, a dark-coloured flower, and Mrs. Wilcox, rose-coloured and white, are distinct. Some of the varieties received are Senator, Evelyn Hemus, Audrey Crier, Paradise Ivory, Mrs. Henry Bell, Othello (Spencer), Helen Lewis, George Stark, The Marquis, Clara Curtis, King Edward (Spencer), Countess Spencer (true), and Elsie Herbert. Mr. BOLTON sent a seedling saved from Audrey Crier, which he considers to be similar to Etta Dyke, and a seedling found amongst plants of Helen Lewis, which he considers to be identical with Nancy Perkins and Earl Spencer.

MR. J. BOWERMAN has resigned his position of gardener to Lord CURZON, Hackwood Park, Hampshire, which he has held for the past 27 years.

WOMEN'S AGRICULTURAL AND HORTICULTURAL INTERNATIONAL UNION.—The annual show and sale of farm and garden produce, also poultry, will be held at the Royal Botanic Gardens, Regent's Park, on Thursday, July 7. The show will be opened by the Marchioness of SALISBURY at 2.30 p.m. Demonstrations in trussing and boning fowls, and in fruit bottling, will be given during the afternoon. An exhibition of drawings of flowers and gardens will be held in the Fellows' room.

DAVID THOMSON MEMORIAL FUND.—It having been decided to close this fund on July 16 next those who are desirous of subscribing are requested to send their contributions before that date to one of the following:—HARRY J. VEITCH, V.M.H., Treasurer of the Gardeners' Royal Benevolent Institution, Royal Exotic Nursery, Chelsea, S.W.; JAMES WHITTOCK, President of the Scottish Horticultural Association, The Gardens, Dalkeith Palace, N.B.; J. W. McHATTIE, Vice-president of the Royal Caledonian Horticultural Society, Public Parks Office (City Chambers), Edinburgh; GEORGE MONRO, V.M.H., Covent Garden Market, London, W.C.; J. H. GOODACRE, V.M.H., The Gardens, Elvaston Castle, Derby; or W. HENDERSON, The Gardens, Balbirnie, Markinch, N.B.

NURSERY EMPLOYEES' OUTING.—The members of the Recreation Club of Messrs. JAS. BACKHOUSE & SONS, LTD., York, held their annual excursion on Saturday, June 25, visiting London, including the Japan-British Exhibition. At luncheon in the Holborn Restaurant, Mr. GEO. GRAY, a director of the firm, spoke of the good feeling that prevailed between the management and employes.

FATALITY TO A SCOTTISH GARDENER.—Mr. R. SIMPSON, the gardener at The Pines, Broughty Ferry, met his death by drowning on the 25th ult. Mr. SIMPSON was seen to fall from the pier at Broughty Ferry, and attempts at rescue were ineffective until life was extinct. Mr. SIMPSON was in the prime of life, and was an able gardener. He is survived by a widow and family, for whom much sympathy is felt.

RURAL EDUCATION.—The Rural Education Conference, which has been constituted by the Presidents of the Board of Agriculture and Fisheries and the Board of Education, for the discussion of all questions connected with education in rural districts and for the periodical exchange of views between representative agriculturists and the two departments, will be composed as follows:—Lord Moreton (Royal Agricultural Society of England), Lord Barnard (Central Land Association), the Rt. Hon. Lord Belper, the Rt. Hon. Lord Reay, G.C.S.I., G.C.I.E., the Rt. Hon. Arthur H. Dyke Acland, the Rt. Hon. Henry Hobhouse (County Councils Association), Sir Francis A. Channing, Bart., M.P., Sir Albert K. Rollit (Royal Horticultural Society), Major P. G. Craigie, C.B., Mr. Graham Balfour (County Councils Association), Mr. Chas. Bathurst, M.P. (Central Chamber of Agriculture), Mr. G. A. Bellwood (National Farmers' Union), Mr. J. F. Blackshaw (Agricultural Education Association), Mr. W. Fitzherbert Brockholes (Lancashire Farmers' Association), Mr. G. G. Butler (University of Durham), Mr. A. W. Chapman (County Councils Association), Mr. F. J. Chittenden (Royal Horticultural Society), Mr. S. H. Cowper-Coles (Land Agents' Society), Mr. David Davies, M.P. (Welsh National Agricultural Society), Major J. W. Dent (University of Leeds), Mr. H. J. Elwes, F.R.S. (Royal English Arboricultural Society), Professor W. R. Fisher (Royal English Arboricultural Society), Mr. P. Hedworth Foulkes (Agricultural Education Association), Mr. W. J. Grant (British Dairy Farmers' Association), Mr. A. D. Hall, F.R.S. (Agricultural Education Association), Mr. W. A. Haviland (Central Land Association), Professor C. Bryner Jones (University College of Wales, Aberystwyth), Mr. T. Latham (Farmers' Club), Mr. J. L. Luddington (Royal Agricultural Society of England), Mr. Howard Martin (Surveyors' Institution), Mr. Ernest Mathews (Royal Agricultural Society of England), Rev. Rollo Meyer (Agricultural Organisation Society), Mr. Wm. Parlour (North-Eastern Agricultural Federation), Mr. C. N. P. Phipps (Bath and West and Southern Counties Society), Mr. J. H. Sabin (Surveyors' Institution), Mr. A. F. Somerville (Bath and West and Southern Counties Society), Professor Wm. Somerville, M.A., D.Sc. (University of Oxford), Mr. A. E. Bromehead-Soulby (Yorkshire Union of Agricultural Clubs and Chambers of Agriculture), Mr. Chris. Turner (Central Chamber of Agriculture), Mr. F. Verney, M.P., Professor T. Winter, M.A. (University College of North Wales, Bangor), Professor T. B. Wood, M.A. (University of Cambridge). The Rt. Hon. Henry Hobhouse will act as chairman of the Conference, and Mr. E. G. Howarth (of the Board of Education) and Mr. H. L. French (of the Board of Agriculture and Fisheries) will act as joint secretaries.

HEXHAM FRUIT CONGRESS AND SHOW.—As already announced, this show will be held from October 20-22. The opening ceremony will be performed on Thursday at 2.45 p.m. by the joint presidents, and the cups, medals, &c., will be presented on Saturday at 3.30 p.m. Arrangements are being made with the following gentlemen to lecture on Saturday, October 22: Professor E. S. SALMON, on "Fungous Diseases," and Professor S. T. PARKINSON on "Smudge Fires." A luncheon will be provided on the opening day at the Abbey Hotel from 1.15 p.m., tickets 2s. 6d. each. The committee, with a view to preventing the public being misled by a show of all sorts of Apples, many totally unsuited for planting in the north, have decided to place the following restrictions on trade exhibits of fruit from growers outside the four northern counties:—1. Varieties of fruit shown must have been supplied by the firms exhibiting to growers within the four northern counties—varieties introduced since 1900 are exempt from this condition. 2. Any variety of fruit introduced since 1900 may be exhibited, but as regards older varieties these are limited to the 12 varieties of Apples and the two varieties of Pears mentioned in the schedule, viz., Apples, Worcester Pearmain, James Grieve, Alington Pippin, Stirling Castle, Ecklinville Seedling, The Queen, Warner's King, Lord Derby, Bismarck, Lane's Prince Albert, Newton Wonder, and Bramley's Seedling; Pears, Pitmaston Duchess and Williams's Bon Chrétien. 3. These exhibits will form a class by themselves and are eligible for awards of medals and certificates.

THE LARCH SAWFLY.—The Board of Agriculture and Fisheries desire to give publicity to the fact that the first caterpillars of the large Larch Sawfly (*Nematus Erichsoni* Hart) were seen this year on the 19th ult. They are now probably to be found in all places infested with this pest, and owners of Larch plantations should arrange to have their trees examined with a view to the discovery of the pest, which must be notified to the Board in conformity with the Destructive Insects and Pests Order of 1910. A memorandum explaining the means of detecting the caterpillar and of distinguishing it from other pests of the Larch can be obtained free on application to the Secretary, Board of Agriculture and Fisheries, 4, Whitehall Place, London, S.W.

DARLINGTON'S HANDBOOKS.—We are informed that the KING has accepted an advance copy of the new edition of DARLINGTON'S "London and Environs," carefully revised by Mr. E. T. COOK, M.A., with new maps and plans and indexes of 12,000 references.

ANOTHER GARDEN VILLAGE SCHEME.—It is proposed to acquire the Brent Lodge estate, Church Lane, Finchley, which comprises 26 acres of freehold land, a mansion, a farm, and the usual outbuildings, for £10,000, and develop it on garden village lines, while at the same time an endeavour will be made by co-operation to purchase all the latest labour-saving appliances in order to eliminate as much as possible the drudgery hitherto inevitable in most middle-class homes. According to the *Times*, meals will be provided in the central building for all who wish to have them so provided, while flats or small houses will be erected to accommodate bachelors or spinsters who, while following their daily avocations, have hitherto not been able, except at great cost, to have homes of their own. The rest of the estate will be occupied by houses of varying size, according to the requirements of the prospective tenants, but due regard will be had to the provision of open spaces. It is intended at present that all the roads should remain the sole property of the shareholders, and not be vested in the local authority.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

CULTURE OF RHODODENDRONS.—If the "black and retentive peaty soil," described by W. (Gardeners' Chronicle, vol. xlvii., p. 429), is well drained, it may be made most congenial for Rhododendrons of the finer kinds by trenching and the addition of plenty of coarse sand, preferably granite sand. *Herbert Maxwell.*

EFFECTS OF LAST WINTER ON VEGETATION.—The following names may be added to the list published in the *Gardeners' Chronicle* for June 25: Killed outright: *Ozothamnus rosmarinifolius*, *Verbena venosa*. Injured: *Escallonia* × *langleyensis*, *E. exoniensis*, *Hypericum patulum*. Uninjured: *Rhododendron* × *kewense*, *Lespedeza cyrtobotrya*, *Hypericum Hookerianum*, *H. triflorum*, *H. x Mozerianum*, *Escallonia Philipiana*, *E. macrantha*, *Fatsia japonica*, *Clianthus puniceus* (on wall), *Acanthus mollis*, *Amaryllis Belladonna*, *Lilium auratum platyphyllum*. *Herbert Maxwell, Monreith.*

—Referring to Sir Herbert Maxwell's interesting notes on this subject in the *Gardeners' Chronicle* for June 27, my theory is that in addition to the causes of loss that he mentions, the want of sunshine and of warm weather during last summer had considerable bearing on the unsatisfactory "wintering" of plants. In South Wales, at least (where we had our full share of losses), roots, root-stocks and branches were insufficiently ripened and the soft, sappy growth easily succumbed to the winter weather. In support of this theory, I may mention that several plants that require to be well ripened in the sun have failed to flower freely this spring, including some sorts of *Narcissus*, *Iris stylosa* in variety, and German *Iris* in variety. *Harold Evans, Llanishen, Cardiff.*

PLANTS ON NORTH-EAST COAST.—It is interesting to note the effects of frost on plants in the same parallel of latitude on opposite sides of our island. The effect of the Gulf Stream on the climate of the west and south-west of Scotland is illustrated by the observations of your correspondent, Sir Herbert Maxwell, whose list, in last week's issue, of the plants out-of-doors which were uninjured, partially uninjured, and killed by the frosts of the past winter is particularly interesting. On the east coast, about midway between Newcastle-on-Tyne and Berwick-on-Tweed, therefore a trifle more southerly than Monreith, Wigtownshire, there are but few of the plants that are named as growing out-of-doors at Monreith which can be risked in the open in the winter months without good protection. None of the species of Himalayan *Rhododendron* would survive unless the weather should prove unusually mild. *R. ponticum*, *R. caucasicum*, *R. catawbiense*, and *R. hybridum* varieties stand the climate and flower abundantly. *Buddleia globosa*, when planted in sheltered spots, is not injured and blooms fairly, whilst at Monreith the plant was injured. *Myrtus communis*, *Illicium*, *Eucalyptus* species, *Phormium tenax*, *Libertia grandiflora*, on the east coast, must be kept in the greenhouse. *Aloysia citrodora* and *Fuchsia Riccartonii* must be well thatched and the soil round about the plants deeply coated with fallen leaves, or the roots, as well as the shoots, would be killed. At Monreith they are uninjured. Most of the plants mentioned as being uninjured would stand no chance on the east side of Northumberland, even quite near the ocean. The power of plants to withstand low temperatures in one place and not in another of the same latitude is a matter well worthy of further elucidation. *F. M.*

ROSE WICHURAIANA "EDMONDE PROUST."

—I should be interested to hear of the experience of growers of this variety as to its colour. Here, for several seasons, it has thrown flowers of a cream colour suffused with a pale salmon-pink, sometimes with a suggestion of copper. This year it has, for the first time, shown us its true colour of "coppery carmine," and this only in the case of a few flowers, the paler-coloured flowers described above greatly preponderating. Both varieties of the flower occurred on the same bush. *Harold Evans, Llanishen, Cardiff.*

EARLY STRAWBERRIES ON SOUTH BORDER.—I read with interest the note from H., *Prognose*, in the issue for June 25, regarding early Strawberries. I have grown Royal Sovereign on a south border here the last few years treated as an annual, and have picked fruits, early in June, from plants which received no protection whatever. This year I picked fruits on June 4, and daily since that date. *F. S., Parham Park Gardens, Pulborough.*

PRIMULA SPECIES.—Whilst the discussion in these columns between Messrs. Nicholson and Farrer may have much interest for specialists in *Primula* species, yet it is a subject of little importance to many readers, simply because the species of *Primula* are little known. Is it possible to create a National *Primula* collection, in which the species from various parts of the world would be grouped according to their habitats, and including all the British species, which florists have great love for, in spite of Mr. Nicholson's remarks? Because these philistines have in the past created, for instance, singularly beautiful garden races of *Auriculas* and *Polyanthuses* from original species, it by no means follows that those species have been forgotten or that they are regarded with contempt. Perhaps it may be difficult under any form of garden culture to make *P. vulgaris*, *elatior*, *veris*, and others thrive as they do in their wild habitats, but it should not be difficult to provide semi-garden conditions for them, such as are found to suit the *Primulas* from China and Japan. Probably there is no other group of plants that, whilst hardy or fairly so, has so many members so varied in character and so widely dispersed. Why not, therefore, promote the formation of a great *Primula* garden and collection at Wisley? Were such a collection in existence, and experts fought battles in the *Gardeners' Chronicle* over *Primulas*, how easy it would be for the reader-umpire to settle the subject of dispute in the presence of a growing collection, thus making a decision that would be final. *A. D.*

LAW NOTE.

SALE OF POISONOUS COMPOUNDS BY A LIMITED COMPANY.

THE hearing of a test case of considerable interest to the nursery trade was concluded in the City of London Court on Tuesday last, the Pharmaceutical Society having sued Mr. A. J. Pecover, manager of the branch of Hobbies, Ltd., at Broad Street Place, E.C., to recover, under the Poisons Acts, a penalty of £5, on the ground that he had sold a poisonous substance, namely X.L.-All fumigator, for use in horticulture without being a person holding a licence under the Act of 1908.

Hitherto many local authorities have taken the view that a licence granted to a limited company necessarily authorises such company to sell by the agency of its manager, but the contention of the Pharmaceutical Society was that such a licence in effect could only empower a limited company to "keep open shop" for the sale, and that, in addition, the manager or other person actually selling the goods must also hold a licence "to sell." In the present case the vendor merely handed a sealed package over the counter and obtained the purchaser's signature to the poisons book and did not profess to make up prescriptions or compound medicines as a chemist would have to do.

Mr. Glyn Jones (instructed by Messrs. Flux, Thompson & Quarrell) appeared for the Pharmaceutical Society, and Mr. R. O. B. Lane (instructed by Messrs. Rutter, Veitch & Bond) appeared for the defendant.

The case was argued fully by counsel last week, the arguments being of a technical nature, dealing with the construction of the various Acts of Parliament bearing on the subject. At the conclusion of the arguments his Honour Judge Lumley Smith, having regard to the importance of the case, reserved judgment until Tuesday last.

In the result, the Judge decided that the licence held by Hobbies, Ltd., was not sufficient to enable their manager to sell poisonous compounds, unless he himself held a licence, but his Honour directed execution to be stayed for 14 days, to enable the defendant to take the case to a higher court.

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

JUNE 21.—Present: J. T. Bennett-Poë, Esq., M.A. (in the Chair); and Messrs. W. Hales, G. Gordon, W. Cuthbertson, J. Douglas, J. W. Odell, R. H. Pearson, E. M. Holmes, and F. J. Chittenden (hon. sec.).

Fungus on roof.—It was reported that the fungus shown at the last meeting from the roof of Chelsea Church was *Coprinus radians*.

Saxifraga umbrosa.—Mr. J. FRASER showed seedlings of a compact form of *Saxifraga umbrosa*, with prettily-spotted flowers differing from the type in stature and in the closeness of the rosettes. The seedlings came true in habit, but showed some variation in the spotting of the flowers.

Cross-bred Pinks.—Mr. DOUGLAS showed a large number of flowers of seedlings the result of crossing the ordinary white form with the pink called "Rubican." The seedlings showed in a marked manner the influence of the latter, and some very beautiful forms were among them; 10 to 12 per cent. of the seedlings bore single flowers, and no fringed flowers were among the singles.

Colouration of Sweet Pea tendrils, &c.—Mr. CUTHBERTSON showed Sweet Pea growths in flower for the purpose of showing that the colouration of the tendrils and axils cannot in every case be accepted as one of the guides to purity of stock. The variety "Mrs. Hugh Dickson" gives both green and coloured tendrils and axils. The old variety "Lady G. Hamilton" behaves in a similar way. Mr. IRELAND, Messrs. DOBBIE'S Sweet Pea grower, says that seed saved from a green-tendrilled plant gives, when grown, both colours in the first generation. It was at one time thought that the presence or absence of colour in the axils and tendrils of Sweet Peas might serve to enable "roguing" to be done at an early stage, but although this is frequently true it is evident that this unit character would have to be selected and bred for like any other, before it would prove a trustworthy guide.

LECTURES ON PANSIES AND VIOLAS.

(Concluded from vol. XLVII., p. 432.)

MR. CUTHBERTSON'S PAPER.

It is now more than 30 years since I joined the firm of Dobbie & Co. Mr. James Dobbie was then in full vigour, and was noted, among other things, for Pansies. I remember several times trying to induce him to grow Violas, but he would have none of them. They are only "bad Pansies," was his oft-repeated remark: "leave them to Grieve and Baxter." In that you see the old florists' condition of mind. To them, form or outline and clear, distinct markings were everything.

From 1860 to 1880 the old English or Show Pansy was gradually being perfected, and the fine varieties then in existence have not since been surpassed. I can remember the best among dark selfs in 1880 were Beacon, Robert Black, The Shah; the finest among yellow selfs, Capt. Hayter, Golden Lion, Yellow King; the finest white selfs, Alpha, Mrs. Dobbie, Janey Anderson; the finest yellow grounds, David Christie, Defoe, Robt. Burns; and the finest white grounds, Blue Gown, Jane Grieve, and Village Maid.

But, even 30 years ago, the Show Pansy was being hard pressed by the Fancy or Belgian Pansy, which is so well known to-day. I do not know whether it is because I have a hankering after old things or not, but I think the Fancy Pansies of the 'eighties—May Tate, Evelyn Bruce, Kenneth Brodie, Miss Bliss, Mrs. Jamieson, Mrs. John Downie, Catherine Agnes, David Rennie, Mrs. E. H. Wood, Wm. Cuthbertson, and others—were as fine and distinct in their markings as any we have to-day. We have certainly increased the size, and I am sure we grow them better, but the quality is not better, or I am much mistaken.

Pansies can be grown in two ways—from cuttings or from seed. Let me speak first about growing named sorts. Speaking generally, they will not give satisfaction in dry, sunny situa-

tions. The wild types love the shelter of a hedge bank, and he who imitates Nature's conditions will succeed best. The morning or late afternoon sun will do good; the full glare of the sun from 11 to 3 o'clock will make named Pansies unhappy. Select, then, a position in the garden where the plants will enjoy themselves, and you will be amply repaid. Prepare the ground in autumn by deep cultivation, enriching liberally with half-decomposed cow dung, if it can be had. Fork over the surface in January or February. Plant the plants from the cold frames in March, with as much soil adhering to the roots as possible, and, with careful tending to watering and other details, splendid flowers will be had during most of the summer. To obtain fine, strong plants for spring planting, cuttings should be inserted in cold frames in a shady position from July onwards to September, and named varieties should certainly be allowed to winter in frames. Now about varieties. I think if I give 12 or 18 names of good doers that will be enough for those who are not exhibitors:—Hugh Mitchell, Archie Milloy, Holroyd Paul, Hall Robertson, Mrs. R. P. Butler, John Picken, Mrs. A. Ireland, Mrs. James Smith, Mrs. H. Stewart, Miss Neil, Miss A. B. Douglas, Margaret Fife, Robt. McCaughie, Mrs. Campbell (yellow), Thos. Stevenson, James McNab, Neil McKoy, Rev. D. R. Williamson. These are fine sorts and good growers.

THE RAISING OF PANSIES FROM SEED.

This is perhaps the best way for those who wish for a good display, as seedlings are always hardier than plants from cuttings, and they can be planted out with safety in most places in autumn, thus ensuring a longer period of blooming. From May onwards seed may be sown according to the treatment it is intended to give the seedlings. If sowing is to be done out-of-doors or in a cold frame, I should recommend the end of May; if in boxes in a greenhouse and carefully looked after, a month later will be time enough. The great object to be aimed at is to obtain by the end of September fine, strong, stubby plants with three or four shoots breaking at the base and well rooted. From the seed boxes or seed bed the plants ought to be transplanted once, say in August.

Results will depend much on the quality of the seed sown, and everyone should make sure of obtaining a high-grade article. Let me say that cheap Pansy seed cannot be good. It is exceedingly difficult to save Pansy seed in quantity in this country, and we are, therefore, dependent to a large extent on foreign seed. To give an idea of the range in quality, wholesale firms like Benary and Vilmorin quote Pansy seed as low as 1s. oz. and as high as 50s. Genuine home-saved seed from named varieties is always difficult to procure, but the highest grade of foreign seed will give excellent results.

Two years ago I saw several, large beds of Pansies in the garden of Mr. Walsh, the schoolmaster, of Birch, in Essex. I never saw stronger, healthier Pansy plants in my life. They were seedlings, which Mr. Walsh told me he sowed in boxes placed under a north wall on June 27 the year previous, transplanted into a bed facing west early in August, and finally planted where they were to flower at the end of September. Before planting out, several had thrown flowers, but these were picked off, and I think this is one of the secrets of getting seedling plants like Pansies, Pentstemons, Antirrhinums, etc., to winter outside—to rigidly prevent them blooming. They then make every effort themselves to survive to carry out their life's work. Mr. Walsh had no loss at all during the winter. At Easter they were in full bloom, and such blooms—hundreds and hundreds—well over 3 inches in diameter, capital flowers most of them. One frequently sees large-flowered, most brilliantly-coloured Pansies on sale in London shops and in Covent Garden, and everyone who buys them, takes them home, and plants them is disappointed. I know, because I have tried it several times. The reason is this. The plants are specially grown and specially fed to produce the blooms which make them sell, and this exertion, coupled with the attempt to transplant when in a flush of growth, ends in disaster. Anyone imitating the procedure of the market-grower under his conditions would get similar results, and the results would be continued if the plants were not moved and the old flowers picked off. The strains used are splendid ones and the results of

many years selection. They resemble in many cases a part of the goodwill of the business, and are carefully treasured by the owners.

VIOLAS.

One of the gardening sensations of last century was the spring bedding at Cliveden carried out by Mr. John Fleming. Violas were largely used, and became known as Cliveden Yellow, Cliveden Purple, Cliveden White and Cliveden Blue. They were most effective for the purpose for which they were used. They were, of course, much nearer to the wild types in habit of growth and form of flower than our modern Violas. These latter are the creations of a host of raisers, nearly all of whom I have known personally during the last 30 years. Here, to-day, I shall only name those who were the pioneers in the work—Grieve of Dicksons & Co., Baxter of Daldowie, Dr. Stuart, Dr. Dickson of Hartree, the brothers William and Richard Dean, all of whom, except Mr. Grieve, are now gone. In the popularising of Violas, or, as he persists in calling them, Tufted Pansies, no man has done better work than Mr. William Robinson. In the early days he persistently figured them in colours in *The Garden*, and I have framed in my bedroom now pictures of Jackanapes and Quaker Maid, Duchess of Fife, Hartree and other old varieties. What impresses one in this connection is the persistency of some of the old Violas. I have before me a catalogue issued by Dicksons & Co., of Edinburgh, in 1880, and I find in it Archibald Grant, Canary, Blue King, Countess of Kintore, Holyrood, Grievei, Lilacina, Sovereign and The Tory, all of which are still grown, and one or two of which are not yet superseded. Advancing 16 years, I find another interesting list in the official report of the trial of Violas in Regent's Park, held under the auspices of the Third Viola Conference. In that list we find Marchioness, Countess of Hopetoun, Pencaitland and Snowflake given among the best whites, and any list of the best whites prepared to day must contain Snowflake and Pencaitland, though I believe the modern Snowflake is an improved form.

Sylvia is given among creams, and it is the best still. *Sublimus* is among the primroses, and none to-day possesses a better habit. The yellows in 1886 have all been eclipsed except Bullion. Other old names which appear and still survive are True Blue, Archd. Grant, Favourite, Wm. Neil and J. B. Riding.

I do not to-day propose to speak of exhibition Violas. If I was addressing an audience in the industrial centres of the north or in Scotland, they would not thank me unless I told them which Violas produced the biggest blooms and made up into the best exhibition sprays. But I wish to speak of the hardiest, the earliest to bloom and the most floriferous.

Three years ago I started to carry out an experiment in Essex to discover which varieties possessed these merits. I collected from the leading growers all the varieties they recommended for autumn planting, and in October I planted them in an open field in Essex. Time will not allow me to go fully into the details of the trial. These will be found in a book written by me and recently published by Messrs. Jack.* It must serve to-day to tell you which have survived satisfactorily over the three intervening winters without the slightest protection of any kind, and have grown into splendid clumps 12 to 18 inches in diameter. I consider the survival satisfactory if 75 per cent. or over have lived. The following varieties have stood that test:—

Whites.—Peace, Seagull, Pencaitland, Christiana, White Beauty (very late).

Cream.—Sylvia.

Yellows.—Klondyke, Grievei, Mrs. E. A. Cade. Shades of blue.—Royal Scot, Blue Duchess, Lilacina, Florizel, Wm. Neil.

Purple.—Jubilee, Edina (very late).

Fancy.—Blue Cloud, Mrs. Chichester.

Fifty to 75 per cent. of some remarkably fine sorts have survived, and these include favourites such as Snowflake, Redbraes Yellow, Walter Welsh, Wm. Lockwood, Iliffe, Primrose Dame, Archd. Grant, Mauve Queen, Maggie Mott, Blue Rock, Lady Marjorie, Bridal Morn, Councillor Waters.

In Edinburgh Mr. McHattie finds the following most satisfactory:—Blue Bell, Royal Scot,

* *Pansies, Violas, and Violets*, (Present-Day Gardening Series).

Saughton Blue, Maggie Mott, Bullion, Redbraes Yellow, Alexandra (white).

Here I might say a word about a class of *Violas* called *Violetta* or *Miniature*. Its origin was a variety named "*Violetta*," raised by Dr. Stuart, of Chirnside. The habit is remarkably close and compact, and almost truly perennial in character. The blossoms are small and sweetly scented. For edgings and rockwork they are most valuable. Mr. D. B. Crane, of Highgate, is one of the best friends the *Viola* has in the south.

I can testify to the marvellously fine effect Mr. MacHattie obtains with his new blue planted in conjunction with whites and yellows, and allowed to stand for two or three years. Saughton Blue I would not term a *Viola*, because it has, like *Lilacina*, a blotch on the under petal. Varieties which are rayed, rayless or blotched should be so described in all catalogues. For some reason or another the blotched varieties are hardiest.

I regret that the Royal Horticultural Society has ceased to hold trials of *Violas*, but I can quite well understand that the soil conditions at Wisley are unsuitable, but they might be made suitable if the ground was cultivated in August and thoroughly enriched with a very heavy dressing of cow manure, and the plants put out in October.

At (Chiswick in the old days very fine trials were held, and time has proved that the majority of the awards then made were right.

DIFFERENCE BETWEEN PANSY AND VIOLA.

Pansies being largely bred from *V. tricolor*, an annual, are less perennial in their character than *Violas*, which, as you have heard from Mr. Grieve, were raised from true perennial species on the maternal side. But nowadays the distinction is an arbitrary one of florists. Generally speaking, *Violas* have no solid markings like the blotches of Pansies, and are best fitted, on account of habit and purity of colour, for all kinds of bedding work.

HORTICULTURAL CLUB.

JUNE 21.—After the usual monthly dinner of this club, held at the Hotel Windsor on this date, Mr. C. E. Shea presiding, Mr. Charles T. Druery, V.M.H., F.L.S., opened a discussion by reading three papers, the first on "Clouds, Rain, and Rivers," while the second embraced "Jack Frost and His Work," and, finally, as affording a better opening for discussion, "Variation and what We Owe to It."

The final paper, on "Variation and what We Owe to It," evoked much interest, since it was pointed out that practically our debt is our very existence, since, without the power of variation and adaptation, which was implanted in the primarily simple forms of life, evolution would have been impossible. From the horticultural point of view it is marvellous what man, with his power of definite selection, has been able to do. While unaided nature seemingly takes aeons of time to effect great structural changes, man can do as much or more within the scope of a short lifetime to modify and transform the flowers, vegetables or fruits, to say nothing of animals. A mere weed like the Cabbage is made the progenitor of many hundreds of diverse forms, most of which are, save in the flower, different from the wild plant in every character. Crossing and hybridizing have also come in to combine the different characters of different species, and thus increase the scope of selection.

EALING TENANTS.

JUNE 25.—The first annual Rose show of the Ealing Tenants Horticultural Society was held in the Institute on the estate on this date. The show was opened by Councillor Farr, who, with the other guests, afterwards went down to the recreation ground to open an open-air kindergarten school.

The show was highly successful, and the Tenants are now eagerly looking forward to the August Bank Holiday show.

RICHMOND HORTICULTURAL.

JUNE 29.—The 36th annual flower show was held on this date in the Old Deer Park. The exhibition was one of the finest of recent years, being reminiscent of the grand shows at Richmond in former times. The number of entries, 500, exceeded by 100 those of last year, the most remarkable additions being in the Rose classes. The Roses were superb, and these, with the fine, non-competitive exhibits, were the features of the Show. For such success much is owing to the hard-working Secretary, Mr. W. J. Cock.

The 1st prize for a group of plants in or out of flower was awarded for a splendid exhibit shown by Lady WAECHTER, Terrace House, Richmond Hill (gr. Mr. H. Burfoot). It consisted of greenhouse plants of fine quality staged with skill. Some fine *Hippeastrums* and gorgeously-coloured *Coleus* were noticed.

In the class for a semi-circular group of plants in or out of flower the best of four groups was shown by W. S. BAILEY, Esq., Poulett Lodge, Twickenham (gr. Mr. H. A. Stiles); 2nd, C. M. BARTLETT, Esq., East Sheen (gr. Mr. H. Hicks). The best Palms were also shown by Mr. BAILEY, who won the 1st prize easily; 2nd, Lady WAECHTER.

Specimen plants of *Coleus*, *Fuchsia*, and *Caladiums* were remarkably fine, but *Orchids* showed a falling off from last year, H. LITTLE, Esq., Baronshalt, Twickenham (gr. Mr. A. Howard), being the only exhibitor. He was awarded the 1st prize. *Lalia tenebrosa grandis* and *Cypripedium superciliale ornatum* being the best examples.

There were three exhibits of six *Caladiums*, those shown by Mrs. VAUGHAN-ARBUCKLE being not only large, but finely coloured; 2nd, Mr. BARTLETT, also with fine plants, well coloured.

Mr. BARTLETT excelled for *Coleus*; 2nd, LIONEL WARDE, Esq., Petersham (gr. Mr. Allum).

The most compact plants of *Fuchsia* were placed 1st, the exhibitor being Mrs. COOPER COLES, Headingham House, Twickenham (gr. Mr. W. H. Keary); 2nd, Mrs. VAUGHAN-ARBUCKLE, with more graceful examples.

Small baskets of flowering plants were pretty. A delightful arrangement of *Begonias*, *Coleus*, *Ferns*, *White Campanulas*, with other pretty subjects, was placed 1st; it was shown by J. H. MASTER, Esq., Richmond Hill (gr. H. Burfoot).

Gloxinias shown by E. R. W. BENNETT, Esq., Darby Lodge, Sunbury (gr. Mr. W. Chant), could scarcely be finer, the best plant having more than forty expanded blooms; 2nd, G. ATKINS, Esq., Manaton, East Sheen (gr. Mr. W. J. Hill), also a good half-dozen. The prizes in this class were given by Messrs Sutton & Sons.

Mr. G. ATKINS won the 1st prize for *Streptocarpus*.

ROSES.

Nothing could surpass the exhibits of *Roses* shown on this occasion. In the class for 48 triplets there was a good competition. There were six exhibitors, and as each required six boxes it will be understood they made a grand display. The quality was high, especially the blooms shown by Messrs. D. PRIOR & SON, Colchester, who won the 1st prize, which included the Gunnersbury Park Challenge Cup; 2nd, Messrs. FRANK CANT & CO., Colchester; 3rd, Messrs. BEN. CANT & SONS, Colchester.

In the class for 24 distinct varieties shown in triplets, there were eight good collections, Messrs. FRANK CANT & CO. reversing positions with Messrs. PRIOR; 3rd, Mr. GEO. PRINCE, Longworth.

In the class for 12 *Roses*, distinct, in triplets, Mr. CHAS. TURNER, nurseryman, Slough, was awarded the 1st prize.

In the two amateurs' classes for *Roses*, Mr. E. J. HOLLAND, Sutton, won the 1st prize in each case with choice flowers.

No fewer than 15 exhibitors competed in the class for 12 blooms of one variety, the 1st prize being awarded for a magnificent stand of Mrs. J. Laing, shown by Messrs. R. HARKNESS & CO., Hitchin; 2nd, Lady Ashtown, shown by Messrs. D. PRIOR & SON; 3rd, Lyon Rose, shown by Mr. GEO. PRINCE.

Tea *Roses* were also shown strongly in a class for 12 blooms of one variety, the 1st prize being

awarded to Messrs. PRIOR for Mme. Jules Gravereaux.

Some choice hardy border flowers were shown in a class for 24 bunches. The 1st prize was won by LIONEL WADE, Esq., Petersham (gr. Mr. Allum); 2nd, Rev. W. H. OXLEY, Petersham Vicarage (gr. Mr. F. Gower).

In Messrs. Eckford's class for nine distinct varieties of Sweet Peas, the 1st prize was won by G. T. BIDDULPH, Esq., with flowers of excellent quality.

For a similar class of Sweet Peas, the prizes offered by Sir Thomas Skewes-Cox, J.P., the 1st prize was awarded to A. W. PERKINS, Esq., Harrow (gr. Mr. G. Baldwin).

FRUIT AND VEGETABLES.

One tent was largely devoted to these, but they were mainly vegetables shown by amateurs and cottagers.

There was no entry this year in the class for a collection of six dishes of fruit, in which Lady Max Waechter offers a cup.

The best White Grapes were Foster's Seedling, shown by Sir WALPOLE GREENWELL, Bart. (gr. Mr. W. Lintott); the best Black Grapes, fine bunches of Prince of Wales, also shown by Sir WALPOLE GREENWELL. The best Melon was exhibited by Mr. BIDDULPH, Petersham. Messrs. W. & E. WELLS, Hounslow, had the best Peaches and Strawberries.

VEGETABLES.—The Earl of DEVON, Powderham Castle, Exeter (gr. Mr. T. H. Bolton), won the 1st prize in Messrs. Webb's class for a collection of six kinds, having fine Potatoes, Tomatoes, Carrots and Peas. 2nd, Miss LANGWORTHY, Holyport (gr. Mr. T. J. Broom), who was placed 1st in the society's class for 12 kinds, Col. BIDDULPH, Ham (gr. Mr. Montague), being 2nd in this latter class.

In Messrs. James Carter & Co.'s class for nine kinds there were five exhibits, the best being shown by E. G. MOCATTA, Esq., Addlestone (gr. Mr. Thos. Stevenson); 2nd, Miss LANGWORTHY.

The numerous displays of vegetables shown by cottagers and allotment-holders reflected credit on the growers.

NON-COMPETITIVE EXHIBITS.

Amongst the more important of these were the following:—

Mr. L. R. RUSSELL, Richmond, made an imposing display with choice stove and greenhouse plants, all of magnificent quality and delightfully arranged. (Large Gold Medal.)

Messrs. JAS. VEITCH & SONS, LTD., Chelsea, put up a floor group of pot *Roses*, interspersed with varieties of *Clematis* and *Lilium*. (Silver Medal.)

Mr. H. E. FORDHAM, Twickenham, showed mauve and white *Gloxinias*, set in a bed of *Adiantum* *Ferns*, with white *Liliums* as foils—a delightful combination.

Mr. W. J. UNWIN, Histon, Cambridgeshire, put up a pretty group of Sweet Peas, having choice bunches of well-known sorts. (Large Gold Medal.)

Mr. C. F. WATERS, Balcombe, Sussex, exhibited *Carnations* in variety. (Large Gold Medal.)

Mr. HENRY ECKFORD, Wem, staged a notable exhibit of Sweet Peas, having several novelties. (Silver-gilt Medal.)

Mr. W. H. PAGE, Hampton, put up one of his usual fine displays of *Carnations* and *Liliums*, with *Rambler* *Roses* at the back. (Gold Medal.)

Messrs. H. B. MAY & SONS, Edmonton, showed choice *Ferns*, including their new *Nephrolepis Marshallii*. (Gold Medal.)

Messrs. T. S. WARE, LTD., Feltham, set up one of the largest groups in this section, having a wealth of hardy flowers, with beautiful *Begonias* of the tuberous-rooted type in front. (Silver-gilt Medal.)

Mr. F. M. BRADLEY, Peterborough, showed *Roses* of remarkably fine quality. (Silver Medal.)

Messrs. BAKERS, Wolverhampton, made a notable exhibit of border flowers, including *Pansies* and *Violas*. (Silver Medal.)

Messrs. KELWAY & SON, Langport, Somerset, showed *Delphiniums* having superb spikes of finely-coloured blooms. (Gold Medal.)

Messrs. WM. CUTBUSH & SON, Highgate, showed *Carnations* and *Polyantha* *Roses*. (Silver-gilt Medal.)

MARKETS.

COVENT GARDEN, June 29.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in one day.—Eds.]

Cut Flowers, &c.: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Alströméria, p. dz. bunches ...	5 0-6 0	Lily of the Valley, extra quality ...	9 0-12 0
Bouvardia ...	4 0-6 0	Marguerites, p. dz. bunches white and yellow ...	1 6-2 0
Calla (see Richardia)		Mignonette, per dozen bunches ...	2 0-3 0
Carnations, p. dz. blooms, best American (var.) ...	1 0 —	Odontoglossum crispum, per dozen blooms ...	1 6-2 6
— Carola, and other special varieties ...	4 0-5 0	Pelargoniums, show, per doz. bunches ...	3 0 —
— second size ...	1 6-2 0	— Zonal, double scarlet ...	3 0-5 0
— smaller, per doz. bunches ...	12 0 —	Poppies, Iceland, per doz. bches. ...	1 0-1 6
Cattleyas, per doz. blooms ...	9 0 —	Richardia africana (Calla), per dozen ...	2 0-2 6
Coreopsis, p. dz. bunches ...	2 0-2 6	Roses, 12 blooms, Niphetos ...	1 0-1 6
Cornflowers, blue, p. dz. bunches ...	1 0-1 6	— Bridesmaid ...	1 0-1 6
— white and pink ...	1 6-2 0	— C. Testout ...	1 0-1 6
Delphiniums, per dozen bunches ...	5 0-6 0	— Kaiserin A. ...	1 0-1 6
Eucharis grandiflora, per dozen blooms ...	2 6-3 0	— Victoria ...	1 0-1 6
Gaillardia, p. dz. bunches ...	2 0 —	— Capt. Hayward ...	1 0-2 0
Gardenias, per dozen ...	2 0-2 6	— C. Metmet ...	1 0-1 6
Gladioli, Colvillei varieties, per dozen bunches ...	3 0-4 0	— Liberty ...	1 0-1 6
Gypsophila elegans, p. dz. bunches ...	2 0-3 0	— Mme. Chateaufort ...	1 0-2 6
Heather (white), per bunch ...	1 0 —	— Richmond ...	1 0-1 6
Lapagerias, white, per dozen ...	2 0-2 6	— The Bride ...	1 0-2 0
Lilium auratum, per bunch ...	3 0-3 6	Scabiosa caucasica, p. dz. bun. ...	4 0-6 0
— candidum ...	1 0-1 6	Spiraea, per doz. bunches ...	4 0-6 0
— longitlorum ...	2 0-3 0	Stephanotis, 72 "pips" ...	1 3-1 6
— lancifolium rubrum ...	2 6 —	Stative, blue, p. dz. bunches ...	5 0 6 0
— lancifolium album ...	1 6-2 0	— yellow ...	4 0-5 0
Lily of the Valley, p. dz. bunches ...	6 0-8 0	— white ...	4 0-5 0

Cut Foliage, &c.: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Adiantum cuneatum, per dozen bunches ...	4 0-6 0	Galax leaves, per doz. bunches ...	1 6-2 0
Asparagus plumosus, long trails, per doz. bunches ...	9 0-12 0	Hardy foliage (various), per dozen bunches ...	3 0-5 0
— medium, doz. bunches ...	12 0-15 0	Ivy-leaves, bronze long trails per bundle ...	1 0-1 6
— Spierkeri ...	9 0-12 0	— short green, per doz. bunches ...	1 0-2 0
Croton leaves, per dozen bunches ...	9 0-12 0	Moss, per gross ...	4 0-5 0
Cycas leaves, each bunches (English) ...	4 0 —	Myrtle, dz. bchs. (English), small-leaved ...	4 0-6 0
Ferns, per dozen bunches (French) ...	5 0-6 0	— French ...	1 0-1 6

Plants in Pots, &c.: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Aralia Sieboldii, p. dozen ...	5 0-8 0	Euonymus, per dz., in pots ...	3 0-8 0
— larger specimens ...	9 0-12 0	— from the ground ...	3 0-6 0
— Moseri ...	6 0-8 0	Ferns, in thumbs, per 100 ...	8 0-12 0
— larger plants ...	12 0-18 0	— in small and large 60's ...	12 0-20 0
Araucaria excelsa, per dozen ...	12 0-30 0	— in 48's, per dz. ...	4 0-6 0
— large plants, each ...	3 6-5 0	— choicer sorts ...	8 0-12 0
Aspidistras, p. dz., green ...	15 0-24 0	— in 32's, per dz. ...	10 0-18 0
— variegated ...	30 0-42 0	Ficus elastica, per dozen ...	8 0 —
Asparagus plumosus, per dozen ...	9 0-12 0	— repens, per dz. ...	6 0-8 0
— Sprengeri ...	9 0-12 0	Fuchsias, per dz., — standards, each ...	2 0-4 0
— tenuissimus ...	9 0-12 0	Grevilleas, per dz. ...	4 0-6 0
Calceolarias, yellow, per doz. ...	5 0-6 0	Heliotrope, per dz. ...	5 0-6 0
Clematis, per dozen ...	8 0-9 0	Hydrangeas hortensis, per doz. ...	9 0-12 0
— in flower ...	18 0-24 0	— Thos. Hogg ...	12 0-24 0
Cocos Weddelliana, per dozen ...	18 0-30 0	Isolepis, per dozen ...	4 0-6 0
Coleus, per doz. ...	4 0-6 0	Kentia Beilmoreana, per dozen ...	18 0-24 0
Crassulas, per doz. ...	8 0-12 0	— Fosteriana, per dozen ...	18 0-30 0
Crotons, per dozen ...	12 0-18 0	Latania borbonica, per dozen ...	15 0-21 0
Cyperus alternifolius, per doz. ...	4 0-5 0	Lilium longiflorum, per dz. ...	12 0-15 0
— laxus, per doz. ...	4 0-5 0	— lancifolium, p. dozen ...	18 0 —
Erica Cavendishi, per dozen ...	24 0-36 0	— martagon per dozen ...	18 0-21 0

Plants in Pots, &c.: Average Wholesale Prices (Contd.).

	s.d. s.d.		s.d. s.d.
Lily of the Valley, per dozen ...	12 0-18 0	Pelargoniums, Zonal ...	5 0-6 0
Marguerites, white, per dozen ...	5 0-8 0	Petunias, per doz. — in 60's ...	0 6-1 6
Mignonette, per dozen ...	4 0-6 0	Selaginella, p. doz. Spiraea japonica, per dozen ...	2 0-3 0
Pelargoniums (show), per doz. — Ivy leaved, per dozen ...	6 0-8 0	Stocks (Intermediate), per dz. ...	4 0-6 0
	6 0-8 0	Verbenas, per doz. ...	5 0-8 0

Fruit: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Apples (Tasmanian), per case: — Ribston ...	11 6 —	Lemons (Messina), selected, large ...	16 0-20 0
— New York ...	10 0 —	— (Naples), 420 ...	22 6-27 6
— Scarlet Pearmain ...	9 6 —	Melons (English) ...	1 6-2 6
— Sturmer Pippin ...	10 0 —	— (Guernsey) ...	1 6-3 0
— French Crab ...	9 6 —	— (French), Cantaloupe, each ...	3 6-6 0
— King Pippin ...	10 0 —	Nectarines, dozen: — selected ...	10 0-15 0
— Five Crowns ...	9 6 —	— seconds ...	2 0-2 6
— Prince Alfred ...	9 6 —	Nuts, Almonds, p. bag ...	36 0-42 0
Apricots (French), per box ...	1 0-1 3	— Brazils, new, per cwt. ...	45 0 —
— per case ...	5 0-6 0	— sorted ...	50 0 —
Bananas, bunch: — Doubles ...	8 0-10 0	— Barcelona, per bag ...	32 0-34 0
— No. 1 ...	6 6-7 0	— Cocoa nuts, 100 ...	10 0-14 0
— Extra ...	7 6-8 0	Oranges: — Californian Navel, box (80) ...	14 6-16 0
— Giant ...	9 6-12 0	— " (112) ...	12 0 —
— Red coloured ...	4 0-5 6	— " (126) ...	12 0 —
— Red Doubles ...	8 0-9 0	— Denia, per case (430) ...	20 0-25 0
— Loose, per dozen ...	0 6-1 0	— (714) selected ...	24 0-26 0
Cherries (English), Early Rivers, per peck ...	8 0 —	— Murcia (200) ...	12 0 —
— (French), p. box 1 bushel ...	1 0-2 6	— (300) ...	12 6-16 6
— Florence Hearts, 1 bushel ...	7 6-10 0	Peaches (English), per doz. ...	8 0-18 0
— cooking ...	8 6-10 6	— seconds ...	2 0-4 0
— Ox Hearts ...	9 6-11 0	Figs, per dozen ...	6 0-12 0
Currants (French): — Black, 1/2 bus. ...	8 0-11 0	— (Tasmanian): — Vicar of Wakefield, large cases ...	13 0-14 0
— Red, p. handle ...	3 0-3 6	— (Florida), per case, 30, 36 ...	16 6-20 0
Grapes (English), per lb.: — Muscats ...	1 2-3 6	Raspberries (English), handle ...	1 0-1 6
— Canon Hall ...	2 9-6 0	Strawberries, p. lb. — cold house ...	0 3-0 6
— Hambro ...	1 0-1 9	— (Kent), p. peck ...	2 0-3 0
— Colmar ...	1 9-3 0	— (Southampton's), per basket ...	0 8-1 0
— Belgian Hambro ...	0 9-1 0		
Lemons, per case: — (Messina), selected, 300 ...	17 6 —		

Vegetables: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Artichokes (Globe), per dozen ...	2 0-3 6	Mint, per dozen bunches ...	2 0 —
— Jerusalem, 1 sieve ...	0 9-1 0	Mushrooms, per lb. ...	0 8-1 2
Asparagus, English, per bdl. 100 sticks ...	1 6-2 0	— broilers ...	0 6 —
Beans (English and Chan. Islands), per lb. ...	0 9-1 0	Mustard and Cress, per dozen pun. ...	0 6-0 8
— Broad (French), per pad ...	2 6-3 6	Onions (spring), dz. bunches ...	3 0-4 0
Broad Beans (English), per bus. ...	3 0-4 0	— Egyptian, bags ...	4 6-6 0
Cabbages, tally ...	3 0-5 0	— New Spanish, case ...	7 0-7 6
Carrots (English), dozen bunches ...	4 0-5 0	Parsley, 1/2 sieve ...	1 6-2 0
— (French), per dozen bunches ...	5 0-7 0	Peas (French), per pad ...	4 6-5 0
Cauliflowers, hamper (24-30) ...	4 0-6 0	— White Kents, per bushel ...	2 6-3 0
— per doz. (large) ...	3 0-4 0	— Blue Kents, p. bushel ...	3 6-4 6
— Dutch, p. crate ...	3 6 —	Potatoes (Algerian), cwt. ...	7 0-8 0
Cucumbers, per flat ...	6 6-7 6	— (Channel Islands), per lb. ...	0 10-1 4
Endive, per dozen ...	1 6-2 0	— (Lisbon), case ...	4 0-4 6
Greens, Spring, bag ...	1 9-2 0	— (St. Malo), cwt. ...	8 0-8 6
— Herbs (sweet), packets, per gross ...	7 0 —	Radishes (French), p. dz. bunches ...	1 0-1 6
Horseradish, foreign, new, per bundle ...	1 6-2 0	Spinach, 1/2 sieve ...	1 6-2 0
— 12 bundles ...	18 0-24 0	Stachys tuberosa, per lb. ...	0 4-0 5
Leeks, 12 bundles ...	1 0-1 6	Tomatoes: — (English), per dozen lbs. ...	3 6-4 6
Lettuce (English), per bushel ...	0 9-1 6	— small selected ...	3 0-4 0
— hamper ...	2 0-3 0	— seconds ...	1 9-2 6
— Cos, per dozen ...	2 0-4 0	— (Guernsey), per dozen lbs. ...	4 0 —
— (French), Cos, per dozen ...	1 6-2 0	Turnips, 12 bunches ...	4 0 —
Marrows, per doz. ...	6 0-8 0	— (French) ...	3 0 4 0

REMARKS.—Southampton Strawberries are a glut; also other English varieties. Consequently prices are very low. Both English and French Cherries are a good supply. English Peaches are plentiful. Currants from France are very good, and samples are selling freely. There are plenty of good English Grapes of all varieties, the demand being fairly good. English Tomatoes are cheaper, 4s. and 4s. 6d. being the top prices for good fruit. West Indian claret-coloured Bananas arrived this week and met a fair demand. Raspberries from Southampton are a fresh arrival on the market this week, 1s. 6d. per handle of 4 to 5 lbs. seems to be the market value at present.—E. H. R., Covent Garden, Wednesday, June 29, 1910.

THE WEATHER.

THE FOLLOWING SUMMARY RECORD of the weather throughout the British Islands, for the week ending June 25, is furnished from the Meteorological Office:—

GENERAL OBSERVATIONS.

The weather was fine at the commencement of the period, but an unsettled condition soon set in in the west, and in the course of a day or two extended to all parts of the Kingdom. Thunderstorms occurred in some western and north-western localities on Monday, and subsequently they were experienced every day in many parts of the Kingdom, accompanied by heavy local rains.

The temperature was above the average, the excess varying from less than a degree in Scotland E. and about 1° in the south-western districts to 3° in the midland and eastern English districts. The highest of the maxima were recorded generally either on the 19th or 20th when the thermometer rose to 81° or above, in all the English mainland districts, the highest readings being 83° in England E. and the Midland Counties. In Ireland the highest value was 75°, in Scotland E. 71°, and Scotland N. 69°. Late in the week the maxima were low for the time of year. The lowest of the minima were mostly registered between the 23rd and 25th. In Scotland E. and W. the reading was 40°, and in England N.W. 41°, while in the other districts the values ranged from 48° in various districts to 47° in England E., and to 48° in the English Channel. The lowest grass minima reported were 34° at Llangamarch Wells, 35° at Hereford, 36° at Sheffield and West Linton, and about 40° in several other localities.

The mean temperature of the sea. Except at Wick, where it was much colder, the water was generally warmer than during the corresponding week of last year, the excess being nearly 5° at Margate and Teelin. The actual means ranged from 63° at Margate, 61° at Eastbourne and Teelin, 59° at Newquay and Seaford, to about 51° at several stations on the north-east coast.

The rainfall was less than the normal in Scotland N. and E. and also in the English Channel, but greater elsewhere. In Ireland and the central and eastern parts of England the excess was large. Many parts of the Kingdom experienced a fall of an inch or more within 24 hours on Monday; the amount of 1½ inch fell at Armagh, and about 1½ inch at Cahir and Rothsay; on Thursday there was 1½ inch at Great Yarmouth, 1 inch at Bradford, 1½ inch at Hull and Huddersfield, and 1½ at Cahir, and on Saturday 1½ inch at Killarney.

The bright sunshine was rather in excess of the average in nearly all parts of England, but deficient in England N.E. and also in Ireland and Scotland. The percentage of the possible duration ranged from 51 in England S.E. and the English Channel, and 44 in England E. and N.W. to 25 in Ireland, 23 in Scotland N., and 19 in Scotland E.

THE WEATHER IN WEST HERTS.

Week ending June 29.

A cold and sunless week.—All the days of the past week were more or less cold, but on only two nights was the temperature below the average. The ground is now at a seasonal temperature at 2 feet deep, but 2° colder than is usual at the end of June at 1 foot deep. Rain fell on four days, and to the total depth of about half-an-inch. There have been a few drops of rainwater the last three days through the bare-soil gauge, but no percolation at all through that on which short grass is growing for 10 days. The sun shone on an average for 8½ hours a day, which is 2½ hours a day short of the average duration for the time of the year. The wind has been rather high the last two days, but during the rest of the week light airs alone prevailed. In the windiest hour the mean velocity amounted to 18 miles—direction W. The average amount of moisture in the air at 3 o'clock in the afternoon exceeded a seasonable quantity for that hour by 7 per cent. E. M., "Rosebank," Berkhamsted, June 29, 1910.

Potatoes.			
	per cwt.		per cwt.
	s.d. s.d.	Lincolns—	s.d. s.d.
Blacklands...	2 0-2 6	Up-to-Date ...	2 9-3 6
Dunbars—		Royal Kidney ...	2 0-2 6
Up-to-Date ...	4 0-4 6	Maincrop ...	2 9-3 6
Lincolns—		King Edwards ...	3 0-3 6
Evergood ...	2 0-2 6		

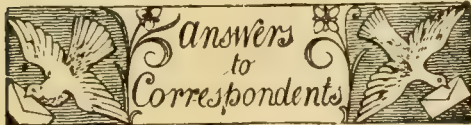
New Potatoes.

Teneriffe, per cwt.	6 0-7 6	Jersey, per cwt.	6 6-7 0
St. Malo, per cwt.	6 0-6 6	Cherbourg, per cwt.	5 9-6 3

REMARKS.—Old Potatoes have sold out better than was expected. Next week will see about the finish of St. Malo and Jersey Potatoes. The market will be well supplied with English tubers from Kent and Bedfordshire. *Edward J. Newborn, Covent Garden and St. Pancras, June 29, 1910.*

COVENT GARDEN FLOWER MARKET.

The enormous supplies of cut flowers of Liliun longiflorum are now exhausted, and the prices advanced 50 per cent. this morning. Beyond this, there is very little to add to last week's remarks. *A. H., Covent Garden, June 29, 1910.*



AMERICAN GARDEN PAPERS: *J. H. H. The Garden Magazine* (Doubleday, Page and Co., 133-137, East 16th Street, New York); *The American Florist* (American Florist Company, 1,133, Broadway, New York); *Horticulture* (Boston).

ANTS ON A LAWN: *W. M.* A simple method of destroying ants is to pour boiling water down their burrows. There are several proprietary articles for destroying ants, one of the best being Ballikinrain Ant Killer. You can obtain this from the horticultural sundriesman. Vaporite, apterite and similar ground insecticides may also be recommended.

BEETLES: *A. B.* and *J. W. S.* The beetles are of the same species as those sent by *Aria* last week (see p. 436).

BEGONIA AND GLOXINIA LEAVES: *Sunflower.* The injury to the foliage has been caused by Thrips. Dip the plants in a solution of soft soap three times at intervals of three days.

CATERPILLARS ON ROSES: *Lowe, Gosfield.* The best plan is to spray the trees with an insecticide. It will be safe in the case of Roses to use some strong poisonous material such as Paris Green or London Purple, both of which contain arsenic. Take one ounce of Blundell's Paris Green Paste and mix it with 12 gallons of water. See that the liquid is well stirred during the spraying operation, and use a fine nozzle. Be careful to work on the windward side so that none of the spray falls on the operator. Gloves should be worn, as the arsenic would be liable to set up inflammation if it entered the skin through cuts and bruises. Lead arsenate is another excellent insecticide, and is very effective in destroying caterpillars. You can obtain both these substances from the horticultural sundriesman.

CLEMATIS DYING: *F. W. C.* The plant has been killed by a pith-mining maggot that has entered at the collar. Dust soot around the base of the stem.

EMPLOYMENT AT KEW: *L. H. M.* You do not read your *Chronicle* carefully. Full particulars of the conditions of employment as gardener at Kew were given in the issue for June 18, p. 416. Write to the director for a form of application.

FLOWER-BUDS OF SWEET PEAS DROPPING: *Disappointed.* You should have sent specimens for examination; without examples we can only enumerate causes that might be responsible. These are a cold, damp spell of weather, drought, excessive manuring, including the too free use of chemical manures, and insect pests.

GRAPE SPOT: *W. McG.* and *H. J.* The berries are affected with spot (*Gloeosporium ampelophagum*). Those sent by *H. J.* are also rubbed, most probably in the process of thinning. To check the "spot," dust flowers of sulphur on the leaves and shoots at intervals of 10 days, until the disease has ceased to spread. On the second application a small quantity of quicklime can be mixed with the sulphur, and the quantity of lime should be increased on every successive occasion, until

the proportions of lime and sulphur are almost equal. In winter, wash the branches thoroughly with a solution of sulphate of iron, and rich stable manures should be used very sparingly. Remove all leaves, shoots, and fruit showing signs of disease, and burn them. (Thanks to *H. J.* for contribution to R.G.O.F. box.)

GRAPES UNSATISFACTORY: *F. D.* The trouble is not due to disease. The cause must be looked for in some wrong cultural treatment.

LILIES DYING: *G. W.* The Lilies are killed by the Sclerotium disease, which is present in the bulbs; 2 ounces of sulphide of potassium in 3 ounces of water is too strong a solution for spraying any plant.

NAMES OF PLANTS: *A. B.* 1, *Cassandra calyculata*; 2, *Vaccinium stamineum*; 3, *Berberis Wallichiana*; 4, *Vaccinium corymbosum* var.; 5 and 6, forms of *Iris sibirica*. The Abies is attacked by a species of chermes.—*Kentea Court.* *Kalmia latifolia*.—*T. Smith.* 1, *Cornilla emeroides*; 2, *Urospermum Dalechampii*; 3, *Hedysarum coronarium*; 4, *Heuchera Wheeleri*.—*J. W.* *Phacelia tanacetifolia*.—*W. C.* *Gesneria cardinalis*, *Pelargonium "Elegante"*, *Sedum sarmentosum variegatum*.

—*A. B.* 1, *Tropaeolum polyphyllum*; 2, *Veronica buxifolia*; 3, *Erigeron philadelphicus*; 4, *Genista pilosa* var.; 5, *Phlomis frutescens*; 6, *Hieracium villosum*; 7, *Lithospermum* sp. (specimen insufficient for determination of species).—*L. G. P.* *Campanula patula*.—*D. Barr.* The specimen was not sufficient for identification.—*H. J. M.* 1, *Lysimachia vulgaris*; 2, *Melilotus officinalis*; 3, *Helixine Soleirolii*.—*F. E.* 1, *Gongora portentosa*; 2, *Eria obesa*; 3, *Dendrobium ciliatum*; 4, *Calogyne odoratissima*; 5, *Hartwegia purpurea*; 6, *Vanda parviflora*.—*W. F., Cobham.* *Gongora gratulabunda*.—*Vectis.* *Lygodium scandens*.—*F. A. R., Sussex.* *Asclepias curassavica*.—*J. T., Liphook.* 1, *Metrosideros floribunda*; 2, *Weigela hortensis*; 3, *Trachelospermum (Rhynchospermum) jasminoides*.—*T. H.* 1, *Masdevallia trichete*; 2, *Stelis micrantha*; 3, *Pleurothallis obovata*; 4, *Cochlidia sanguinea*; 5, *Epidendrum virens*.—*A. M.* 1, *Clematis*. Send when in flower; 2, *Ginkgo biloba*. The Begonia is affected with rust. Dip the plants in tobacco water.—*C. M.* Crown or Mummy Pea.—*L. G. P., Dorset.* *Campanula patula*.

ORIGIN OF THE POLYANTHUS: *Correspondent.* There appears to be no definite record as to the origin of the Polyanthus, but the generally-accepted theory that this race of garden plants is the result of a cross between the Cowslip and Primrose is probably the true explanation. Miller, whose name is given as the authority for the name *Primula polyantha*, says in the *Gardeners' Dictionary*, in 1768, "a Primrose or Cowslip, with heart-shaped, crenated leaves, having footstalks and flowers growing in bunches on very long footstalks. It has been much improved in the last 50 years as almost to equal the variety of the Auricula." There seems to be no reason why one should doubt that the Polyanthus is the result of crossing these two species, and we have reason to believe that experiments now in progress will prove the truth of this hypothesis.

PEAR TREES: *J. H.* There may be many causes to account for the Pear tree remaining practically dormant whilst another one next to it has grown freely. The constitution of the tree may be responsible, or it may be due to a weakened root system. Perhaps it is grafted on the wrong stock, or the soil at the particular spot in which it is planted is unsuitable. Similar cases are not infrequently seen in gardens where fruit trees are planted extensively.

PELORIC FOXGLOVE: *E. P. D. & Sons.* The terminal flower of the spike has become regular, a condition termed Peloria, frequently seen in such flowers as Foxgloves and Antirrhinums.

PLANE TREE: *Platanus.* No disease is present on the piece of stem sent. There is probably a fungus present in the root, for which there is no remedy.

PLANTS FOR PÆONY BED: *H. P. Powell.* Nothing is more suitable for associating with Pæonies, to flower in the latter part of the summer, than a selection of Liliums, or even a number of plants of one variety of Lily. *L. tigrinum Fortunei giganteum* and *L. t. splen-*

dens are especially to be recommended for grouping, as the plants take up comparatively little room. The varieties of the *L. speciosum* group are best for the purpose, except that they might be considered too late in flowering. The varieties *cruentum*, *macranthum*, and *Melpomene* have highly-coloured flowers; *album* and *Krætzleri* have white flowers. The species named other than *L. speciosum* flower in August and September, and should be planted 5 inches deep. *L. speciosum* flowers in September and October, and should be planted 8 inches deep: because of the great mass of stem roots, which appear on or near the surface, a mulch of some rich material should be afforded the plants during the summer.

PLANTS OF GREEN CHILI: *R. O. S.* It should be possible to obtain plants from some of the nursery firms who deal in vegetable seeds. Many gardeners would have surplus plants, and they would probably oblige you with some. Insert a small advertisement in some gardening paper.

ROCK GARDENS NEAR LONDON: *F. E. S.* In addition to the fine rockery in Kew Gardens, you should endeavour to visit the remarkable Alpine garden at Friar Park, Henley-on-Thames. Visitors are sometimes allowed to inspect the rockery for a small fee, which is given to local charities. The rock-garden at Leonardlee, Horsham, is also celebrated, whilst rock-plants are extensively planted at Wisley Gardens.

ROSE BUDS: *W. G. W.* See reply to *J. M.* under "Proliferous Roses" in the last issue, p. 436.

ROSES: *Correspondent.* *Empereur du Maroc*, sent out in 1859, is the nearest to a black Rose. Prince Camille de Rohan (1862) and Grand Mogul (1875) are both blackish-maroon at times, but always with a distinct shade of maroon-scarlet. There is no blue Rose. *Veilchenblau*, a seedling from *Crimson Rambler*, and like it in flowering and growth, has been advertised as a blue Rose. This was sent out last year. It is reddish-lilac while young, but takes a dull, steely-blue as the flower ages, and is the nearest approach to blue we have. One may also find a distinct shade of purplish-blue in a fresh flower of *Bardon Job*.

ROSES: *W. R. G.* The leaves are affected with the Rose-leaf black blotch. Spray the plants with diluted copper sulphate or with *Eau Céleste*, which has been found useful against this pest. Damage to the foliage is also apparent from some leaf-eating insect.

ROSE SPORTING: *W. O.* You did not mention on what variety of Pink Rose the sport appeared. The bloom was too full-blown when received to properly judge of its merits, but it appeared worthy of perpetuation. The season is at hand for budding Roses, and you should insert a few buds from this special shoot on to stocks of the ordinary Briar, or ask some nurseryman to do so for you. Another season, submit flowers to the National Rose Society at their summer show.

SHELTER FOR THE KITCHEN GARDEN: *H. P. P.* As it is impossible to employ bricks on account of the cost and you object to using stone, your only alternatives are wooden fences or live hedges. If the situation is not too exposed some dense-growing Conifer might be planted to form a hedge. Hornbeam planted thickly and cut so as to make a square hedge offers great resistance to wind, and is often employed by the nurserymen as shelter for tender plants out-of-doors. Beech may be similarly employed, whilst Yew, Box, Holly and Quick offer further selection. Your best plan is to see what is used for enclosing other gardens in the locality, and, if a live hedge is employed, select the plant which succeeds best in the district.

Communications Received.—*W. Currell* (thanks for 2s. received for the R.G.O.F.)—*H. B.*—*G. H.*—*F. B.*—*J. M.*—*G. W.*—"Bostonian"—*A. F. D.*—*W. R. P.*—*C. P. & Co.*—*R. L.*—*N. L.*—*V. N. G.* & Co.—*Ed. W.*—*W. G. S.*—*G. T.*—*E. H.*—*F. M.*—*H. J. E.* (thanks for photograph).—*W. R. S.*—*A. P.*—*W. R. D.*—*A. A. P.*—*W. E.*—*G. H. P.*—*Abergavenny*.—*W. McC.*—*S. W. F.*—*W. P.* & *S.*—*C. T. D.*—*J. F. C.*—*T. H.*—*J. M.*—*W. F. R.*—*C. F. D.*—*W. C.*—*A. D.*—*K.* & *Son*—*T. B.*—*H. P.*—*W. D.*—*A. H.*—*F. G.*—*B. A. W.*—*A. G. S.*—*W. I.*—*F. M.*—*J. D.*—*W. P.*—*A. D.*—*R. W.*—*A. Southern Grower*—*A. P.*—*H. F.*—*B. F.*—*A. D.*—*T. M.*—*W. S. B.*—*W. C.*—*C. C.*—*F. N. S.*—*H. J. J.*—*N. S.*—*S. W. E.*—*H. R. A.*—*W. F. H.*—*S. E. T.*—*M. M. K.*—*A. E. M.*—*S. R. S.*—*C. H. S.*—*N. A. G. A.*



EVERGREEN OAK AT WILTON HOUSE.

GIRTH OF TRUNK, 18 FEET: CIRCUMFERENCE OF BRANCHES, 270 FEET.



THE

Gardeners' Chronicle

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BRITISH ALPINE GARDENS.

SINCE my last visit to Britain, some two or three years since, I find that the love of alpine plants has grown so remarkably and their cultivation so much increased, that it is impossible to record the progress within the limits of a single article. Nobody can view this great development without astonishment. When I first visited England in 1885, I was so surprised with what I saw in gardens that I returned to Geneva discouraged with my own efforts, thinking that I had better give up gardening or go and reside in England. I had, however, some encouragement from friends here, who thought I could, in some ways, do even better with alpine plants in Geneva than they, and their encouragement decided me to continue. I have found that certain subjects will grow in my dry and sunny climate, if not better, at least quite as well as in England.

The following impressions of some gardens which I have recently inspected are given in the order in which I visited them.

I have on a former occasion written of Friar

Park, Henley-on-Thames. I find on revisiting it, that the rockery has been considerably enlarged. The Matterhorn stands in the middle of this miniature representation of the Pennine Alps, with the Italian valleys lying on the south in natural positions. What a marvellous display of plants are to be found flourishing in this most picturesque rock-garden! *Daphne Blagayana* seems to be quite at home, and I never saw more beautiful patches of *Schizocodon soldanelloides*. The scheme of the rock-garden is so imposing that the small jewels of the high altitudes are almost lost sight of, but they are there, jealously cared for by the owner. There were seen in full flower *Campanula cenisia*, *Alyssum spinosum roseum*, *Linnaea borealis*, a large collection of terrestrial Orchids, and many others.

A remarkable collection of alpine plants is to be seen in Sir Dighton Probyn's garden at Windsor Castle. The gardens surround the Big Tower and the Norman Keep, and are interesting especially on account of the number of species which have been planted in the old walls of the fortress. Saxifragas, Campanulas, Phyteumas, and other plants grow well in perpendicular positions, whilst, at the foot of the tower, Pinguiculas, Sarracenias, Gentians, and Primulas flourish in a bog garden. In a new rockery, that contrasts greatly with the old stonework of the castle, many fine plants are flourishing.

In the neighbourhood of Windsor Castle is to be found a place full of poetry and charm, away from the noise of town and pervaded by a sense of restful calm. I refer to Bishopsgate in Windsor Forest, where Lady Marcus Beresford is creating a most beautiful garden and forming one of Nature's pictures which surpasses the best of man's paintings on canvas.

Hillbrook Place is not far from Bishopsgate, and there a wood-garden bears the same importance to the place as does the rock-garden at Friar Park. I have seen it three or four times, and always with fresh pleasure. In some respects Hillbrook reminds me of Wisley garden as it was when it was still under the care of Mr. Wilson. The place will be even more delightful in the future.

The gardens at Kew always appear increasingly beautiful. Kew is a museum of new and rare living plants, with most of the gems of the world's flora. What is there to be said about Kew which has not been said already a thousand times?

In the manufacturing and mining districts of England, where the beauty of Nature has been spoiled by man, are to be found some of the cleverest and most attentive of gardeners. I refer to those workmen who possess fine collections of Auriculas in their windows. Nothing can be better than these. I went to Yorkshire and Lancashire, and scarcely saw a ray of sunshine. I fear the sun is as seldom to be seen there as a fog in Geneva. But, of course, there must be a sun in Yorkshire, as well as in Surrey or Switzerland—I believe in it, at least.

I could not imagine a better alpine garden than I found in this northern district. It is a very small one, enframing a kitchen garden, I am sorry to say, but containing the best specimens of the alpine flora which I have seen in this country—this before I went to Edinburgh. I refer to Wennington Hall, where an enthusiastic lady grows choice species from the high Alps, tending to their wants herself. When I say that I saw there the following plants in full flower and perfect growth, some small idea of her success may be formed:—

Aquilegia alpina, *Eritrichium nanum* (grown from seeds), *Androsace glacialis*, *A. helvetica*, *A. pubescens*, *A. villosa*, *Phyteuma hemisphaericum*, *Azalea procumbens*, *Ranunculus alpestris*, *R. parnassifolius*, *Anemone alpina*, *A. sulphurea*, *A. narcissiflora*, *Arnica montana*, *Trifolium alpinum*,

all kinds of Gentians, Primulas, Soldanellas, Drabas and Alyssums.

Near to Lancaster, close by the sea, but higher, of course, than the town, at Bailrigg, I saw a very large place, where Ferns attain such dimensions that they suggest the period when Ferns formed the most imposing vegetation. And there, in ordinary brick walls, was the most exquisite bit of wall gardening I have ever seen in England. These walls, facing south and west, are supporting soil at the back, and, consequently, are always moist. They are covered with flowers, and everything seems to succeed in them. I have always maintained that wall-gardening is the best means of growing rare and delicate alpine plants in England. But the walls must be perfectly perpendicular; if not, the plants will fail. I did not know before that it was possible to grow such a big collection of Alpines in a brick wall, for I was of the opinion that baked earth (bricks) would be adverse to plant life. The gardens of Bailrigg quite alter my opinion.

Mr. Farrer's garden at Ingleborough offered another surprise to me. I visited this place some years ago, but it has been largely increased, and especially in two interesting directions; I mean the moraine- and the falaise-garden. In two moraines (of course, not those big moraines which surround the glaciers) Mr. Farrer grows the most delicate of alpine plants—*Gentiana bavarica*, the more beautiful *G. Rostanii*, *G. verna*, *G. brachiphylla*, *Ranunculus alpestris*, *R. glacialis*, *R. bilobus*, some rare *Androsaces*, and a good collection of alpine plants from high altitudes. Of course, this method of growing alpine plants has not yet been proved, and we have to await the results before approving of it. The falaise is a natural wall, rising perpendicularly above a little lake, and the path to it is what a Parisian would call "vertigineux." In that wall, Mr. Farrer has been sanguine enough to plant alpine plants that are most difficult to cultivate, including *Androsace argentea* (imbricata), *A. helvetica*, *A. pyrenaica*, *A. pubescens*, *A. ciliata*, numerous kinds of Saxifraga of the Kabschya group (*S. diapiensoides* and *S. Vandellii*, for instance), and even many peat and bog-loving plants, which seemed to me a paradoxical arrangement. I hope that Mr. Farrer's sanguine anticipations will be fulfilled.

Underley Hall gardens are well known for their beauty, and years ago I was enthusiastic about them, my visit then being in autumn. This year I saw them in the spring time, and I dare not say at which season of the year they appeared the better. It is for me a "Paradis Terrestre," its wild-garden being an intermediate form of gardening between the rock and the wood-garden.

But, after seeing all these places, I went to Edinburgh, and I saw there, in the Botanical Garden, alpine plants which I knew only by reputation. I went there as a pilgrim to a shrine, and I should never have imagined that such rare and choice plants could be made to flourish together. Words fail me to express my enthusiasm. Everything is flourishing to an extent that I have never found elsewhere. Professor Balfour is an enthusiast, pur sang, and loves plants in a way that I have seldom known.

In this garden *Omphalodes Luciliae* looks as happy as it does at Floraire, and a wall is quite covered with the exquisite *Armeria caespitosa*. A number of rare Spanish plants have been raised from seeds taken out of dried specimens in the herbarium, and many of them were new to me. *Pentstemon Menziesii Douglasii*, which created such a sensation at the last Temple Show, looked very happy, and many new Himalayan, Tibetan, and Chinese Primulas were growing with freedom. None of the rare plants I enquired for were absent. Professor Balfour showed me *Diapensia lapponica*, *Saxifraga arachnoides*, and *Rubus chamæmorus*, which nobody else, I believe, can grow successfully.

I once went to Yena, in the centre of Germany, to see a plant of *Rubus chamemorus* growing there in a garden, and it seemed anything but happy. Not far from the Botanic Garden is the nursery of Mr. Fraser, where I saw *Primula suffrutescens* in full bloom. I must confess that I came back from Edinburgh rather discouraged. Although I do not cultivate the sin of jealousy I envied the success which had attended English and Scotch gardeners in their cultivation of choice alpine. *H. Correvon, Floraire, Geneva.*

(To be continued.)

ORCHID NOTES AND GLEANINGS.

DENDROBIUM WILLIAMSIANUM.

A good specimen of this beautiful *Dendrobium*, exhibited by H. S. Goodson, Esq., Fairlawn, Putney (gr. Mr. G. E. Day), at the Royal Horticultural Society, on June 21, serves to revive the interest in this always rare species, which was first introduced from New Guinea by Mr. B. S. Williams, and illustrated in the *Gardeners' Chronicle*, 1886, p. 173. It is certainly a species to which importers might well turn their attention, for it should be better represented in gardens. In growth it resembles a slender *D. Phalenopsis*. Its showy flowers, each between 2 and 3 inches across, have the blush-white sepals and petals arranged on one plane, the scoop-shaped, violet-coloured lip being sheltered by the sepals and petals. It is a most elegant and distinct species, requiring warm-house treatment similar to *D. Phalenopsis*, and, according to the experience of Mr. Goodson's Orchid grower, it is not more difficult to grow than that popular species, a warm, moist house, however, being essential. At Fairlawn it flowers regularly.

DENDROBIUM OCHREATUM LUTEUM.

DENDROBIUM OCHREATUM was discovered by Wallich in the Chittagong district, India, and described by Lindley in *Bot. Reg.*, 1835. In 1837 Gibson brought the first living plant to Chatsworth, where it flowered early in 1838, and was figured in *Paxton's Magazine of Botany*, vi., t. 265, as *Dendrobium Cambridgeanum*, under which name it is generally found in gardens. The stoutish, cylindrical stems are swollen at the joints and curved. It has the peculiarity of flowering on the leafy, new shoots, before their growth is finished. The flowers, generally in pairs, are each over 2 inches across and of a rich, golden yellow, with a deep maroon-purple blotch on the lip.

It has been imported frequently in moderate quantities, but no variation in colour worthy of note seems to have been observed.

At present, however, a plant is flowering in the Orchid-nursery of Mr. H. A. Tracy at Twickenham, in which the flowers are of a lemon-yellow colour, the purple blotch on the labellum being also much lighter in tint than in the ordinary form.

HARDY FLOWER BORDER.

CAMPANULA BARBATA.

THIS charming Alpine has behaved this year in a remarkable manner. Although I brought it home from the Albula Pass more than 30 years ago, it has always shown with me uncomfortable biennial tendencies, and I have had to replenish the stock several times by purchase. Only one out of a dozen old plants survived last winter, but this year there have sprung up dozens of vigorous seedlings, which are now flowering with a profusion I never saw before in this species. On one plant which I measured this morning (June 26) the main spike is 18 inches high, with 17 bells simultaneously expanded, and with half-a-dozen other spikes coming on. These seedlings have come up in a peat border at the foot of a retaining wall, on which the defunct parent plants were growing. *Herbert Maxwell.*

SOME HANDSOME SENECIOS.

SENECIO MACROPHYLLUS, shown in the accompanying illustration, is a hardy perennial from the Orient. It is of coarse growth, and hence unsuited for borders of choice plants or for small gardens. It is, however, valuable for the wild garden, where its massive character is seen to advantage and furnishes a picture of bold beauty. The glaucous leaves are nearly 3 feet in length. The flower-stalk attains a height of 6 feet, and the yellow flowers are borne in a loose, broad panicle.

is highly effective when grown in bold groups. It is not suited for the herbaceous border, as it is a terrible land-grabber and will quickly overwhelm less vigorous neighbours. The growth is most luxuriant when the roots have access to liberal supplies of plant-food and an abundance of moisture, and the noble masses of foliage and large, brightly-coloured flowers are especially attractive when reflected in still water. The positions prepared for this plant should always have a liberal dressing of partly-rotted manure worked into the soil, which should be broken up to a depth of at least 2 feet. When growth is



FIG. 3.—*SENECIO MACROPHYLLUS*: FLOWERS YELLOW.

S. clivorum was introduced about eight years ago from Western China, and is also found in Japan. It is of the greatest value for planting in positions where bold vegetation is appropriate. The plant has large and handsome foliage, the roundly peltate leaves being about 20 inches in diameter, whilst the forked flower-spike often attains a height of 5 feet. The blossoms are rich orange-yellow, with dark centres. It is best suited to a position on the margin of a lake or by the side of a stream, while it will succeed in a moist spot in the wild garden, and

made under favourable conditions, strong plants soon form specimens 5 feet across.

S. tanguticus is a native of Central China, whence it was imported in 1902. It is one of the finest plants yet introduced for the wild garden, large groups having a splendid effect among natural surroundings. The elegantly-cut foliage is exceedingly graceful and the great, erect, pyramidal-shaped panicles of flower, often nearly a foot in height and 8 inches in breadth, are particularly ornamental when seen from a little distance. The individual blossoms are very small.

Each flower consists of three narrow, yellow petals, but the great panicles with their little blooms lightly poised have a pretty, plume-like effect. Like *S. clivorum*, it enjoys moisture and is seen at its best when growing by the waterside. Its flower-spikes attain a height of from 5 to 6 feet, and where the conditions are to its liking it soon forms huge clumps. It blooms in September, the flowers being followed by silky seed-vessels that form a silvery-grey cloud of great beauty. It is quite unsuited for the border owing to its rampant growth, and is a nuisance where space is limited. Its vigorous aggressiveness is, however, an excellent feature in the wild garden, as it proves beyond a doubt that it can take good care of itself, and in such a site the plant possesses a measure of attractiveness that well accords with its environment.

S. Veitchianus is a recent introduction from China. It is a very free grower and is seen to the best advantage when backed by dark-leaved trees. It flowers during August and September, throwing up columnar flower-spikes 5 feet high which carry an abundance of deep, golden-yellow blossoms well above the handsome, cordate foliage. It is a splendid species for massing by the lakeside or in moist places in the wild garden, where it is vigorous enough to hold its own with the native vegetation.

S. Wilsonianus is another newly-introduced plant from Western China. It has large, heart-shaped leaves and very erect flower-spikes that rise to a height of 5 feet. In this species the spikes are columnar and thickly studded with flowers somewhat resembling those of *Eremurus*. From the point where they emerge from the clustered foliage the spikes are closely set with bright, golden-yellow flowers to their very summit. It is a fine plant for the moister spots in the garden, but needs considerable space, and is out of place where room is limited. The foregoing are some of the best of this large genus. *Wynndham Fitzherbert*.

SCOTLAND.

THE BEGINNING OF THE ROSE SEASON.

ATMOSPHERIC influences have of late been extremely favourable to the culture of the Rose in Southern Scotland. Owing to the alternation of strong sunlight and congenial rains, the blooms of the earliest varieties have been much larger and fuller than in many previous years. The first Rose to bloom in my own garden this season has been the beautiful, salmon-pink hued Viscountess Folkestone, one of the most richly-fragrant of all Hybrid Teas, and perhaps the most valuable and enduring in its popularity of Mr. Henry Bennet's raising. It was closely followed by the famous Lyon Rose, whose glorious colour, shrimp-pink, deepening like a sunset towards the centre, and most delicately suffused with chrome-yellow, is marvelously effective. Another new Rose of great attractiveness is Margaret, raised by Messrs. Wm. Paul & Son, of Waltham Cross. Albatross, also one of their most recent introductions, has a complexion almost peculiarly its own. Their brilliant Juliet I recently had the gratification of seeing at their nurseries. I admire it greatly and regard it as a most distinct acquisition.

Of the Newtownards Roses, those that succeed best in South-western Scotland are Margaret Dickson, which is always reliable and often flowers here at an abnormal height, Lady Helen Stewart, an odorous and exquisite Rose, Ard Rover, Mrs. Sharman Crawford, Helen Keller, and Florence Pemberton. Mary Countess of Ilchester, which is said to be a very handsome and lustrous variety, has not yet flowered here; but I am hoping for some floral activity on its part early in autumn. A veritable gem is Molly Sharman Crawford. It was by far the sweetest Tea Rose in my garden last year, and it requires a sunny, open position. The only dark crimson Hybrid Perpetual I have at present (June 25) in bloom is Salamander, a variety of the most

velvety texture; but Duke of Edinburgh, Duke of Teck, Lady Helen Stewart, Hugh Dickson (an invaluable variety), Horace Vernet, Captain Hayward, and Charles Lefebvre are almost contemporaneous.

The Wichuraianas and their American derivatives have an affluence of embryonic flowers, especially Lady Gay, Hiawatha, Christian Curle, and the white Dorothy, of which the last-mentioned Rose, though sufficiently fascinating, is not more beautiful than the Waltham Bride; while Paul Transon, a charming hybrid between this fine-foliaged race of Roses and *L'Idéal*, is already, with characteristic precociousness, preparing to bloom. *David R. Williamson*.

THE ROSARY.

WEeping ROSES AS POT PLANTS.

ONE of the most striking of modern introductions in the Rose world is the Weeping Standard Rose. With its magnificent trusses of bloom, and its beautiful shiny-green foliage, there is nothing which looks so graceful in the conservatory when used as a pot plant. Its tall stem and drooping heads have an effect quite lacking in upright-growing plants. The Weeping Standard Rose is looked upon by some as a shy plant to cultivate, but I have found from experience that there is nothing easier to bring to perfection. A mistake is frequently made in trying to flower the plant before it is established, and I have heard complaints from gardeners who have purchased plants, potted them and put them straight-away into heat, expecting them to flower well in the first season. Freshly-potted plants should be left one season in the pots to become firmly established before starting them in heat. When newly-potted plants are placed directly into heat they are forced to break into growth, but the roots, being less active than the top, they soon suffer a check.

There are so many varieties that it is difficult for the general purchaser to select those pleasing in colour and of a perfect habit. I have therefore taken much trouble to select a number of varieties which combine all the qualities needed for the perfect weeper, which is a plant having a stem not less than 5 feet 6 inches in height. My selection is Hiawatha (deep crimson with yellow stamens), Dorothy Perkins (shell-pink), Tausendschon, Peach Blossom, Minnehaha (dark rose colour), Paul Transon (rose colour), and White Dorothy Perkins. A good yellow variety is needed with the qualities of Minnehaha. I have seen Alberic Barbier used, but I cannot say that it is perfect for such purposes. There is a new variety in which I have much faith at present, for it possesses free-blooming qualities, large trusses, and a better yellow it will be hard to find. In Alberic Barbier the blooms are mostly single, which is not desirable in a weeping plant. The new yellow has the name of Aviateur Blériot, and I think, when this variety is introduced as a weeper, we shall have a complete collection.

SORTS TO BE AVOIDED.

Those who think of purchasing novelties should purchase them from a good nursery, and avoid such sorts as I shall mention, because they do not weep well, it being against their habit to do so. At the same time, they are to be recommended, and used, when the more suitable varieties cannot be obtained. They are: Blush Rambler, Thalia, Goldfinch, Stella, Waltham Bride, Philadelphia Rambler, Seagull and Bordeaux. The average gardener who selects with judgment, avoiding such sorts as I have mentioned, will be able to bring his Weeping Roses to perfection as pot plants.

HOW TO GROW THEM.

In the first place, time is of importance. Let early plants, such, for instance, as are wanted in April or early in May, have about 18 weeks for growth.

When the plants are taken into their new

quarters, after standing outside all the previous autumn, a good "dry-out" is most important, so as to make the soil porous. Whilst the plants are drying-out, prune them, but take care to remove all the upright-growing shoots, and leave the drooping shoots about 12 inches in length, so as to give the appearance of an umbrella. Cut the small shoots back to three eyes, which grow from the strong, weeping shoots. When the plants have had a good dry-out, give them a watering, and take care afterwards not to let them get too dry or too wet. Syringe them well night and morning, let them have plenty of air when first started, and bring them gradually to the heat by closing the house at night. Do not force them too fast before the bloom-buds are set or the eyes will be blind. When bloom-buds are set, you can apply more heat if desirable, but those grown on the cool side, with plenty of air when occasion permits, become stronger plants and the flowers a better colour. The atmospheric temperature at night should be 55° to 60°. When the flowers are showing colour, liquid manure may be afforded the roots at intervals of some two or three days. *A. B.*

NOTES ON IRISES.

IRIS LÆVIGATA AND I. KÆMPFERI.

MAY I once more revert to this subject, the interest in which is renewed by the recent exhibition of a variety of the so-called albo-purpurea?

As far as I have been able to discover, the truth of the matter seems to be that in the marshy ground on the banks of the River Amur there grow two Irises, one with somewhat narrow leaves, with a distinct mid-rib—to use a convenient but inaccurate term—and the other with much broader, yellow-green leaves, which have a very slight, if any, trace of thickening along the centre. Of these, the former is apparently the *I. Kämpferi*, of Siebold, and the latter the *I. lævigata*, of Fischer and Meyer, but not of Regel. (The latter is a synonym of *Iris Kämpferi*.) *I. Kämpferi* has deep red-purple flowers, relieved by a golden central ridge on the falls, whilst *I. lævigata* is the best blue Iris that I have ever seen. I incline to think that these two Irises are the parents of the *Kämpferi* hybrids so extensively grown in Japan.

Of *I. lævigata* there are certain garden forms, apparently from Japan, of which the first to be noticed in England was Mr. Baker's albo-purpurea, a plant with white falls dotted with pale blue. The plant which Messrs. R. Wallace & Co. exhibited on June 21 (see *Gardeners' Chronicle*, vol. xlvii., p. 231) was a deep-blue form of this, and I am sorry to say that at least two double monstrosities are also to be obtained from Japan, one with six fall-like petals of a deep indigo-blue colour and the other of a dingy grey colour of similar shape. All of these are, however, vastly inferior, to my mind, to the type, with its large flowers of a glorious deep-blue colour. Both this and *Kämpferi* are now in flower together here, and I am inclined to wonder whether the Japanese really prefer their double monstrosities, or whether they simply palm off such freaks on us and keep the type to themselves. At any rate, the type seems extremely difficult to obtain, although I hope, in a year or two, to be in a position to distribute some of the many seedlings, both of the type and of the beautiful form albo-purpurea that are growing here.

If this view is adopted, the proper nomenclature will be:—*I. lævigata* Regel, a deep-blue single flower; *I. lævigata* Rgl. var. albo-purpurea Baker, for the original Kew plant, which is still growing by the side of the new Water Lily tank there; and *I. lævigata* Rgl., var. albo-purpurea colchesterensis, for the plant that Messrs. R. Wallace & Co. showed. In view of the length of this latter title, it would surely be better to give some English name to this garden form, especially as it seems more convenient to reserve Latin names for wild species. *W. R. Dykes. Charterhouse, Godalming.*

IRIS TINGITANA.

THIS Iris, which is a native of Tangiers, whence it was introduced into this country in 1872, resembles a glorified Spanish Iris. The blossoms are very lovely, the standards being violet-blue and the falls a delicate French-grey, which colour is set off by the gleaming yellow of the central blotch. The flowers measure 5 inches across, and, with the falls, spread out 10 inches. The width of the falls is about 2 inches, and the height of the standards is 4 inches. Although this Iris has been known in England for nearly 40 years, it is but little grown, and apparently but few are able to flower it satisfactorily. Numerous letters have appeared from time to time in the horticultural press commenting on this species' persistent refusal to bloom. These failures have not been confined to amateurs who have just taken up the pursuit of gardening, but some of our most eminent horticultural experts have had to admit ill-success. The late Sir Michael Foster wrote that he had never bloomed it in the open; Mr.

versation, and having heard that the Tangiers Iris grew in sand, determined to apply Mr. Elwes's suggestion to it. I had grown *Iris tingitana* for some years with complete lack of success as long as it was left in the ground through the winter, but with an occasional flower when it was lifted as soon as the foliage had died down and replanted in October. I had always, however, grown it in sandy soil. In making the new bed I placed a deep layer of manure 8 inches below the surface, and mixed with the upper soil an equal proportion of old Mushroom-bed manure, so that it was very rich. The bulbs were planted 3 inches deep and entirely surrounded with silver sand. The next year I had 29 flower-spikes from 30 bulbs, another year 11 out of 12 bloomed, and for the last six years this Iris has flowered splendidly. My success I attribute entirely to Mr. Elwes, and am convinced that what *Iris tingitana* requires is a very rich soil. This year I feared that, for the first time for six seasons, I should have no flowers. Groups of my largest bulbs are planted near the house so that there may be a good show from the windows.

in January, and from that date they bloom until the end of April. This year they blossomed simultaneously, and were at their best in the third week of April. Two years ago I had an inquiry from a correspondent asking me if I would tell him how I managed to flower this Iris. I sent him the fullest particulars of my method of culture, and the next year was pleased to receive a letter from him telling me that he had followed my instructions to the letter and had succeeded beyond his expectations. In this note I have given full cultural details in order that any readers who wish to do so may be able to follow the system, which, with me, has led to such pleasing results; for certainly anything that will induce this lovely Iris to relinquish its shy-blooming habit and become a free flowerer is worthy of note. *Wyndham Fitzherbert.*

THE MYSTERY OF FRUIT FAILURE.

IN making remarks upon this subject, it is desirable in the first instance to explain that by "failure" is meant more or less serious partial failure, and not absolute failure—a catastrophe, indeed, which rarely, if ever, happens. This partial failure appears to be general throughout the country in the cases of all fruits except Strawberries, Red and White Currants and, possibly, Raspberries. There have been years in which any one of the fruits other than those named has been more nearly a complete failure than it is this season, excepting Black Currants and Pears; the crops of these are the smallest that I have ever seen, but I cannot recall any year in which Apples, Pears, Plums, Damsons, Gooseberries, Black Currants, Cobnuts and out-door wall-fruit were so deficient, taking them all round, as they are this season. Still more striking is the consideration of the disappointing results of prospects which at one time were fair in some cases and uncommonly good in others; and it is in this connection that the "mystery" of fruit failure comes into play.

There is no mystery as to the cause of the dropping of Gooseberries and Black Currants. That this was due to frost seems to me to be clearly proved by the almost complete denudation of bushes in low and sheltered parts of fields, where frost is always most severe, while a passable show of fruit was left on high ground in the same plantations. All that is puzzling in relation to the partial failure of these fruits is that it is much worse than it has been in seasons in which more severe frost than occurred last spring has been experienced, and that Red and White Currants passed safely through an ordeal which damaged Black Currants very badly. On my own farm near the south coast, no more than 3° of frost were registered 4 feet from the ground after Gooseberries and Currants were in blossom, and so much only once, whereas in previous years 5° or 6° have done no harm to these crops. Whether or not the comparison of frosts close to the ground-level would be proportionate to those of 4 feet about it, I am not able to say. But the damage appears to have been done by one of the frosts which occurred after the fruit was set early on the three mornings which ended with May 11, the most severe of which on my farm was only 2°. As to out-door wall-fruit, the vitality of the blossom seems to have been destroyed by the frost of 3°, which was registered by me on the morning of April 3. In this case, again, the fruit has often passed through a more severe ordeal with impunity. Apparently, the particular stage in the development of fruit blossom or embryo fruit is as much accountable for damage done by frost as the severity of the latter, within moderate limits. This is a point much needing investigation.

The almost complete failure of Pears in my orchard is more difficult to account for than the less serious damage to Gooseberries and Black Currants. The Pears were not in blossom when the frost of 3° took place, and, therefore, they had no more than 2° degrees to encounter. Is



FIG. 4.—IRIS TINGITANA FLOWERING IN DEVONSHIRE.

Archer-Hind told me that he had only flowered it once in 30 years; the late Rev. Henry Ewbank, of Ryde, admitted that for 15 years it had not flowered with him; the late Mr. Wolley-Dod stated that he had grown it for 20 years without having flowered it, and wrote "I must confess myself quite at a loss to know what its requirements are," whilst Mr. Irwin Lynch, in his *Book of the Iris*, says that it is not worth cultivation, presumably on account of its disinclination to bloom. If, however, Mr. Lynch had seen the bed here illustrated he would probably have altered his opinion. In the face of all these records of defeat in the culture of this Iris it is pleasant to be able to record a story of success. A few years ago, when Mr. Elwes was with me, we had a talk about tender plants, and he said that it was useless in this country to employ the same soil as that in which they grew in their native land. That a plant which in its home grew in sand would not succeed in that staple in England, but required richer food to make up for the change of climate. I thought over this con-

After the foliage had come up I saw that the stems were rotting off below the ground. On examining the spot I found that without my knowledge the bulbs had been covered deeply with earth and had more than a foot of soil over them, which accounted for their failure to bloom. In a reserve garden I had a colony of smaller bulbs planted, but expected no flowers from them. However, to my surprise and delight, I saw that many of them were throwing up flower-spikes, and in all 35 were perfected. The plants were very strong, all of them averaging well over 2 feet, while the tallest was only 2 inches short of 3 feet. The garden hangs over the river at the mouth of the Dart, and is about 35 feet above the water level. I invariably lift the bulbs when the foliage has died down and keep them in a dry drawer until the end of October, when I replant. If they are left until well on in November the tops will have begun to grow, but this does not affect their flowering. The blooming season of *Iris tingitana* is very irregular. I have had perfect blossoms in the open

it possible that so slight a frost could kill the blossom almost completely? I cannot believe that it is so. Moreover, the profuse blossom on some tall trees on a high level, where only 1° was registered 4 ft. from the ground, failed as completely to set fruit as that of trees on a low level. Much of the blossom in the former case was 10 feet above the ground level, at which altitude the temperature was probably not below the freezing point. The only suggestion which I can make to explain the mystery of Pear failure is the persistence of wet weather and the frequency of cold wind throughout the blossoming period.

Turning to the case of Plums, the mystery of failure deepens. Like Pears, they were subjected

there was the extensive dropping of Plums after they had been formed. No explanation suggests itself as to the reason why some varieties bore hardly any blossom and others a full or fair quantity. The scarcity was noticeable alike on very vigorously-growing Early Prolifics and feebly growing Monarchs, while the abundance occurred on strong Victorias and weak Pond's Seedling. Seeing that all alike were subjected to the disadvantageous conditions of last summer, the vast difference in blossoming is mysterious. The dropping took place only from the varieties which blossomed fully or fairly.

In the case of Apples, the difference in quantities of blossom did not altogether follow the lines of varieties, as it did with Plums. Most

in making a great deal of wood last season, and those of their fruit-buds which had not been nearly matured in 1908 apparently failed to ripen completely in 1909.

There would have been a good crop of Apples on the whole on mature trees if a fair proportion of the blossom had set and remained on the trees. But, in the first place, nearly all the blossom failed to set fruit on some varieties; and, secondly, a very large proportion of the fruit which was set dropped off most kinds. There was no frost after Apple blossom opened, and the failure of it to set is the first mystery. It is true that there was an attack of the Apple sucker, but the pest was almost annihilated where it was at all numerous by spraying when the blossom-buds were unopened, and I have the best crop of Apples on two or three varieties which were worst infested, while others of the infested varieties set an abundance of small Apples, which nearly all dropped off. It is this unusual extent of fruit-dropping, which reports show to be common throughout the country, that is most disappointing and inexplicable. Three rows of mature Duchess of Oldenberg were so thickly covered with small Apples, that four women were occupied over two days in thinning them, leaving, of course, the largest. Ten days later, nine-tenths of the Apples they had left on the trees had dropped off, so that their labour was entirely wasted. Other varieties thinned themselves without any attention. Some young and vigorous Golden Spires, which set a good crop of Apples, now have the ground under them strewn with fruit, some of which is as large as a Walnut; and Worcester Pearmain, which set a great crop of Apples in clusters, has thinned its fruit to about half a crop, nearly all singles. Of course, the forcing off of weak by strong fruit in a cluster is a common occurrence in any season; but the extent of the operations this year is phenomenal. If this were all, there would not be much cause to complain, as a crop of single Apples is pretty certain to be one of fine fruit. The great cause for regret is the extensive dropping of whole clusters.

An additional cause of the shortness of the Apple crop that will be saleable is not mysterious. This is the extraordinary proportion of fruit spoilt partly by the sawfly maggot and partly by caterpillars which have gnawed surface holes in the Apples. *A Southern Grower.*



FIG. 5.—IRIS TINGITANA: COLOUR OF STANDARDS, VIOLET-BLUE; FALLS, GREY, WITH YELLOW BLOTCH.

in my plantations to no more than 2° of frost after the blossom opened; but, unlike Pears, their blossom set well in the first instance, and the evil was that more than half the fruits turned yellow and dropped off when about as large as Peas. There was no frost at all after the fruit had set. It is quite certain, therefore, that frost is not accountable for the serious partial failure of Plums in my plantations. In the first place, there was the lack of any considerable quantity of blossom on some varieties, due probably to the non-maturing of fruit-buds in the cold and wet summer of 1909; and, secondly,

kinds of mature trees blossomed profusely as a rule, while other trees of the same varieties had little or no bloom, and a few varieties had hardly any. The possible explanation is that varieties and individual trees which bore great crops last year failed to complete the ripening of immature fruit-buds last summer, while varieties and individual trees which had very little fruit last year finished the ripening of fruit-buds which were just short of the maturity necessary for blossoming in that season. Young trees, four and five years from the planting, for the most part failed to blossom fairly. They were engaged

PLANT NOTES.

EXACUM MACRANTHUM.

THIS *Exacum* was at one time regarded as a difficult plant to cultivate, but Messrs. James Veitch & Sons have contributed several excellent batches of it at recent meetings of the Royal Horticultural Society. A group of *Exacum macranthum* in the greenhouse at once arrests attention by reason of the showy flowers, which are of a rich bluish-purple tone. The flowers of *Pleroma elegans*, a shrubby Melastomad from the Andean region of South America, are of this shade. This plant is another test of the cultivator's skill.

Many of the early failures with *Exacum macranthum* arose from an excess of warmth, the temperature of a stove being considered necessary for its well doing, but coming as it does from the more elevated regions of Ceylon it must be regarded rather as an intermediate-house subject.

The members of the Gentianaceæ generally are remarkable for the rich shades of blue and purple in the flowers. A member of the same order was, in my younger days, largely grown in gardens, but I have not met with it for some time, this is *Eustoma Russellianum*, formerly known as *Lisianthus Russellianus*. It is a native of Texas, whence it was introduced about a century ago and named in honour of the Duke of Bedford.

W.

NOTES FROM A "FRENCH" GARDEN.

WE have just planted the last batch of Cauliflowers for the autumn market, where Turnips or Cos Lettuces have been grown in the open, and among the Melon frames, putting four plants under each light. Previous to the planting, the Cauliflowers were carefully examined, and every plant attacked by maggot was discarded. Maggots have been unusually numerous in the seed-beds this season.

The Cauliflowers planted in the open ground late in March are now ready for the market. Those grown in the cloche-beds will be ready in 10 or 12 days.

The Carrots (Chantenay) sown in the open early in March are now marketed, and their place will be occupied by the Celery known as Red of Aylesbury. The red varieties do not do well on the old manure beds, and produce very slim plants.

The winter batch of Endive (La Ruffec) for heavy ground, La Meaux for sandy soil, and also the Batavian Green will be sown in a few days in order that they may be ready for planting out in the middle of August. These crops sell at remunerative prices, especially when sent to the market in small quantities at a time. They can be bleached as required till Christmas without any more protection than the litter or mats used for the bleaching.

The first Melons were marketed on June 21, and Cucumber Telegraph has been planted in their place. All the Melon plants have grown a great quantity of wood, as the fruits are nearly fully grown, and the weather has been favourable. These extra growths must be thinned out not to weaken the plants unnecessarily, because another batch of fruits may be obtained if the plants are still strong and healthy. Where Melons are grown under cloches it is advisable to put frames and lights in their stead as soon as these are available from the first batch. It is also necessary to choose the first fruit when grown under cloches to obtain a fruit of good size and flavour early in September. The Melons, when in the ripening stage, must be examined frequently, especially on a very hot day. They should be cut as soon as the stalk begins to crack, and placed in a cool cellar for a few hours before being dispatched to market. *P. Aquatias.*

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

EFFECTS OF LAST WINTER ON VEGETATION.

—Referring to this subject, I may say that *Ozothamnus rosmarinifolius*, which has been killed outright with Sir Herbert Maxwell in a considerably milder district than mine, is now coming into flower in my own garden. The plant is against a south-west wall, and was injured severely. *Lilium Hansonii* was injured by late frosts, and did not open its flowers, although not suffering much otherwise. Roses have suffered a good deal, but the most injured has been Tea Rambler, which was hardly any the worse for the winter of 1908-1909. Last winter it was cut almost to the ground. Dorothy Perkins growing on a short pergola has again been injured, but the position is a rather draughty one. Jersey Beauty has suffered more than some others of this class, but, on a pillar, it has been less injured than on the pergola. The *Hypericums* have been little injured, and, with the exception of *Arbutus Unedo Croomei* and *Phlomis fruticosa*, there is little to report in the way of losses. *Veronicas* have suffered considerably, however, but, trying as the winter was, the losses here do not seem to have been any greater than usual. *S. Arnott, Sunnymead, Dumfries.*

—The following notice of the behaviour of certain shrubs and plants in the south-eastern corner of England since their ordeal of last winter may perhaps prove of interest as a sequel to what has already been reported in your columns by Sir Herbert Maxwell and others:—*Uninjured*: *Tricuspidaria lanceolata*, *Eucryphia pinnatifida*, *Carpenteria californica*, *Buddleia Colvillei*, *B. auriculata*, *Solanum crispum*, *Davidia involucriata*, *Sophora flavescens*, *S. platycarpa*, *S. Moorcroftiana*, *Embothrium coccineum*, *Rhododendron cinnabarinum*, *R. Falconeri*, *Philesia*

buxifolia, *Eriobotrya japonica*, *Sollya heterophylla*, *Pentstemon cordifolius*, *Perovskia atriplicifolia*, *Clerodendron Fargesii*, *C. trichotomum*, *C. Bungei*, *Senecio eleagnifolius*, *Olearia stellulata*, *O. macrodonta*, *O. nitida*, *Stuartia pseudocamellia*, *Teucrium fruticans*, *Rhyncospermum jasmynoides*, *Clinanthus puniceus albus*, *Mitraria coccinea*, *Magnolia Campbellii*, *Notospartium Carmichaeliae*, *Sphacele Lindleyi*, *Plagianthus Lyallii*, *P. betulinus*, *Corokia cotoneaster*, *Pittosporum crassifolium*, *Desfontainea spinosa*, *Drimys Winteri*, *Lomatia ferruginea*, *Hoheria populnea*. The following shed their leaves, but are quite vigorous: *Gordonia pubescens*, *Feijoa Sellowiana*, *Schinus patagonica*, *Illicium floridanum*. *Injured*: *Eleodendron sphaerophyllum pubescens*, cut down to the ground; *Tricuspidaria dependens* (true), upper shoots nearly a foot long killed, otherwise growing strongly; *Poincinea Gilliesii*, *Anona triloba*. *Slightly injured*: *Rhaphitamnus cyanocarpus*, *Fallugia paradoxa*, *Eugenia apiculata*. These are the "mimps" of the garden: *Pueraria Thunbergiana*, *Mutisia clematidea*, *Myosotidium nobile*, *Cantua buxifolia*. *Killed*: *Bowkeria triphylla*, *Crossosoma californicum*, *Agapetes buxifolia*, *Sollya Drummondii*. Such plants as *Salvia patens* and *Dahlias* remain here in the ground permanently. The garden is on an exposed site, 200 feet above the sea, and distant from it about three-quarters of a mile. *T. A. Hyde, Ringinglowe, Hythe, Kent.*

—In reference to Sir Herbert Maxwell's remarks on plants of doubtful hardiness, I may state that the following species are growing here in an exposed position at an altitude of about 610 feet and 45 miles from the Gulf Stream:—*Abutilon* var. *ilacina*, *Rhododendron Falconeri*, *Eleagnus macrophylla*, *Buddleia globosa*, *Berberis nepalense*, and *Rhus cotinoides*, which are here uninjured. Of the plants which he lists as uninjured we grow 16, which are here uninjured, namely, *Buddleia Colvillei*, *B. variabilis*, *Carpenteria californica*, *Azara microphylla*, *Erica arborea*, *Indigofera Gerardiana*, *Romneya Coulteri*, *Fuchsia Riccartonii*, *Lilium auratum*, *Crinum Moorei*, and *C. Powellii*. *Sparaxis* or *Dierama pulcherrima*, and the white variety, *Invarvillea Delavayi*, *Campanula fragilis*, *Kniphofia caulescens* and *Omphalodes Luciliae*, *Escallonia macrantha*, *E. Langleyensis*, and *E. Philippiana* are now in full flower. Of *Cistus* we have a good collection, all uninjured. The same applies to *Veronicas*. The semi shrubby variety *rupestris* is now very fine, a sheet of blue as a carpet to other flowering shrubs. *Coronilla hypnoides*, which has survived with a little injury the previous four winters has succumbed. *Opuntia Rafinesquii* has weathered the last four winters in good condition. Special mention may be made of the profuse flowering of *Cytisus* in several varieties, *Choisya ternata*, and *Prunus cerasifera atropurpurea*, which is now carrying fruit. Of bulbous plants: *Narcissus*, *Anemones* in several varieties, and *Irises* have flowered quite equal to usual. *John Edwards, Sylfaen Gardens, Welshpool.*

EXHIBITION VEGETABLE CULTURE.—*Practical* states that I should know better than to say "exhibition Cauliflowers, Potatos, and Beans need only ordinary culture." He asks, do I mean Cauliflowers planted 4 feet apart, mounted about the stems with manure, and daily supplied with water, or Potatos planted 4 feet apart, Tomatos thinned from 12 fruits on a bunch to five, and Beans planted 15 inches apart in the rows? All this is the wildest imagination. Were this form of cultivation adopted it would destroy all hopes of success. Cauliflowers treated as stated would produced heads 10 inches to 12 inches over. What chance would they have of winning prizes? Potatos 4 feet apart would produce huge, ungainly tubers. Tomatos so severely thinned would be two to the pound, and so on. Can anything be more absurd? The very best Cauliflowers possible for show are those of quite medium size, solid and white, easily obtained under ordinary culture. Whoever saw the leading vegetable exhibitors put up larger heads? Those who remember the perfect and beautiful Broccoli heads shown by Messrs. Sutton & Sons not long since, know they came from an open field. I see in our markets here myriads of Cauliflowers so grown which would be prized by any exhibitor of vegetables. I beg readers of the *Gardeners' Chronicle* not to be led away by *Practical's* remarks. All the tendency of vege-

table judging is against undue size. Quality, not excessive size, is now the universal requirement with all kinds or classes. Runner Beans are commonly sown 10 to 12 inches apart, in the row, and to the benefit of the plants and crops; I have seen rows of Runner Beans when in full fruit at Hackwood Park, Sydmoncton Court, Highclere Castle, Aldenham House, Welbeck, and other good vegetable gardens, and the grand growth and crops has astonished even so old an observer as myself. Large size in Onions does not represent lack of quality. In a well-ripened bulb of Ailsa Craig there is exactly the same quality of flesh found in a bulb of any other variety, but the taste is milder and that is by no means a defect. For stewing or baking alone these bulbs are splendid, and as to profitable production, let *Practical* ask any cottager or allotment-holder whether he prefers large bulbs to small ones, and he will soon get his answer. Long Runner Beans are always tested for tenderness and edible value. Peas are opened and tested for colour and tenderness and flavour, also for fullness, and not for mere size of pods, as is so foolishly assumed. Celery is tested for its solidity, freshness, blanched condition, and its bolting or non-bolting properties; Leeks for their colour, purity, and fitness for cooking, and not for length of blanched stem, which, as a rule, rarely exceeds 14 inches and never runs to 20 inches. This is, I think, sufficient criticism on my part. Growers who are poor cultivators are fond of flinging stones at those who are first-class vegetable culturists. The man who can do great things under glass may not always be so successful in the kitchen garden. *A. D., Kingston-on-Thames.*

SPRING CABBAGES.—I notice from the report of the trials of Spring Cabbages conducted by the National Vegetable Society (see *Gard. Chron.*, vol. xlvii., p. 423), there are no fewer than 36 names. I would ask what are we to learn from this report? Is not such a publication of varieties most bewildering to the inexperienced, who needs at the most two varieties of Cabbage to meet all the requirements of a moderate-sized establishment? Even the largest garden does not require more than three distinct sorts. A good variety of Cabbage, even if raised 20 or more years ago, is at the present as desirable as any of the so-called modern sorts. For example, Ellam's and Wheeler's Imperial were excellent sorts long ago, and apparently retain their food properties at the present time, as I note that they receive three marks. Surely the National Vegetable Society could find much more important work than the mere publication of a list of three dozen sorts of Cabbages. I think it is beyond doubt that a Cabbage is still a Cabbage, and a vegetable appreciated much during two or three months of the year, and, as there is so little difference between varieties when cooked why confuse the public with such a plethora of varieties? It is a well-known fact that the cottager of even a little experience is alive to the best variety for his purpose and understands methods of culture without the aid of a national society. *E. M.*

SOUVENIR DE LA MALMAISON CARNATIONS AT ENVILLE.—The cultivation of "Malmaison" and other Carnations has made great strides during the last few years, but nowhere have I ever seen such a grand collection, or such well-grown specimen plants as those in the collection at Envil Hall, Staffordshire, the seat of Sir Henry Foley Grey. There are hundreds of plants in successional stages, from those in 5-inch pots to others growing in 16-inch pots. Some of the larger specimens have upwards of 50 flowers, open and opening, and every plant is in robust health, whilst some of the leaves measured fully $\frac{3}{4}$ inch in breadth. Maggie Hodgson, Duchess of Westminster, Nautilus, Princess of Wales, King Oscar, and many other varieties grown on as specimens, 3 feet 6 inches through, and properly staked out, fill one with admiration. They have found the right sort of loam at Envil for the purpose, and it appears to contain a goodly proportion of soluble lime. Mr. Green, Junr., who has entire charge of these beautiful gardens, is to be congratulated upon his successful cultivation, thereby proving himself a worthy son of a worthy sire, seeing that his father, Mr. Green, Senr., was head gardener for upwards of 35 years at Envil until the death of the Dowager Lady Stamford. *W. Crump, Madresfield Court Gardens.*

WILTON HOUSE GARDENS.—The interesting notes that have recently appeared in these columns pertaining to Wilton House Gardens induce me to record a few personal reminiscences of the place. My association with Wilton was upwards of half a century ago, when I acted as flower gardener under Mr. John Brown. In those days, *Plumbago capensis* was considered to be the gem of the parterre in the Italian garden, and as a dwarf bedder it was assigned two of the large, angular beds in proximity to the fountain. In summer it presented unique masses of incomparable, dainty, corulean-blue flowers, the only edging being that afforded by the formal grey-stone bordering. I may here remark that after Wilton, on my appointment as head gardener at Ethington Park, Stratford-on-Avon, I found the climatical conditions so favourable that I cultivated *Plumbago capensis* in the new architectural flower-garden there, with favourable results, and as an edging next to either the grass or Box bordering an excellent combination was found in Mangle's variegated *Pelargonium*, or, by way of a change, the intermixture of the twain afforded a most pleasing "shot-silk"-like effect. Another effective picture was that produced by associating *Calceolaria amplexicaulis* with the *Plumbago*. The historic evergreen Oak

less seed is produced than is the case with the ordinary border *Polyanthus*. All seed-pods are practically bald when formed, whilst in all common *Polyanthus* flowers the pods are wrapped in a green calyx. Hose in Hose *Polyanthuses* were once plentiful, and the late Richard Dean had so many of such a fine strain that he was enabled to offer true and distinct seeds of them. At Long Ditton there were also very large breadths of *Polyanthuses* in colours. Specially plentiful were the rich crimsons, and a strain of an almost rosy-scarlet was singularly bright and almost fiery in the sunlight. Dull shades, such as purple, mauve, buffs, and browns, are not appreciated at Long Ditton, although many are particularly fond of these hues. Whites and yellows were plentiful and good. The old gold-laced section is extensively grown, and Mr. W. Barr hopes to be able to resuscitate that fine quality and beauty of markings which formerly characterised George IV., Lancer, Exile, Cheshire Favourite, and others of the best exhibition varieties. These latter, like the show *Auriculas*, are essentially florists' flowers. A. D.

SWEET WILLIAM PINK.—I am sending you by post a few blooms of an old floriferous mule Pink. The double flowers are a deep rosy-crimson, and the spikes were cut from large clumps

John, then what is Fairchild's Pink, or is the latter lost to gardens? J. Murison.

GERMINATION OF UNRIPE SEEDS.—In my fernery I have a plant of *Lapageria alba* which last season bore a number of flowers. In the late autumn, on entering the fernery, I trod upon what I at first took to be an unripe Plum on the tiled path, but on inspecting it I found that it must have been an hitherto unnoticed seed vessel of the *Lapageria*, within which I found about 20 seeds, white and quite soft, oval and about the size of Sweet Pea seeds. Happening at the time to have pricked out a number of Fern prothalli an inch apart into a 9-inch pan, it occurred to me to place these seeds in the spaces between the prothalli, just inserting them on the surface. This I did, covering them with a sheet of glass, but not with soil, so that they were still visible. To my great surprise, each one shortly produced a shiny root, which penetrated the soil, and in some cases lifted the seed a short distance from it. Eventually, after a period of some months of apparent dormancy, a bud appeared at the points whence the roots issued, and the end result is that although most of the seeds have disappeared, three have survived, of which one has developed a shiny leathery leaf with a healthy bud at its base; another promises to do the same, the leaf being in embryo and the bud visible, while the third seed is still intact, with its root in the soil, but the leaf has failed to develop. I am, therefore, practically certain of two plants, although the seeds were soft and pulpy and evidently very far from being ripe, or ready for sowing. This has resulted in the absence of any artificial heat in a room where several degrees of frost were experienced during the winter, and I attribute the loss of the majority of seeds to sourness of soil, since the Fern prothalli failed in many cases, and the sowing was far from satisfactory. All the seeds germinated quickly and vigorously. Chas. T. Druery, V.M.H., F.L.S.



FIG. 6.—THE WARREN HOUSE, STANMORE.

(See p. 22.)

(*Quercus Ilex*), which was so excellently reproduced in the *Gardeners' Chronicle* last week, used to serve as a protection for bedding plants before they were sufficiently hardened for planting in the beds. The specimens of Cedar of Lebanon were also objects of veneration. William Gardiner.

SOME OLD-FASHIONED FLOWERS.—In their nurseries at Long Ditton, Messrs. Barr & Sons are growing those old favourites, Hose in Hose, Jack in the Green, Galligaskin, and some other quaint forms of *Polyanthuses*. It was a surprise and pleasure to see these old garden flowers in bloom in May. The Jack in the Green section is represented by flowers of white, yellow, red, crimson, and other shades, and the true form has its pips backed by a broad, green, abnormal calyx. The Galligaskin, or Jack on Ape, as it is sometimes called, has the calyx split up or divided into a somewhat leafy form. Then some varieties have the calyx parti-coloured, it having become partially petaloid and partially green. Though curiosities, they are none the less pretty. The Hose in Hose, or duplex section, has the normal green calyx converted into an ordinary floral pip, from out of the throat of which projects the normal pip. It is only in the throat of the latter that the reproductive organs are found, but because of the unusual length of the throat tube,

now in full blossom that continue to flower until late in the autumn. It is a very uncommon plant, and is known as the Sweet William Pink. The leaves are broader, the stems stronger and stiffer than the ordinary mule Pinks of Napoleon III. type, and the flowers possess a fairly strong clove scent. Wm. Masters, when in business in Canterbury, recorded it in 1831 in his interesting plant- and seed-catalogue, *Hortus Duroverni*. More than 20 years ago an old lady, then over 70 years of age, showed it to me in her garden near Andover. She was the only person I ever heard call it "Sweet John," and that induced me to look up Philip Miller's gardening dictionary and others, and as a result of my enquiries I have come to the conclusion that the Sweet William Pink and the "Sweet John" or Fairchild's Pink are identical. Miller describes it accurately under *Caryophyllus* as a narrow-leaved, hybrid Sweet William known as Fairchild's Pink, and in all probability it is the first recorded hybrid plant in British horticulture. It is scarcely known in the modern trade. I have submitted plants to the R.H.S. Mr. Douglas, Mr. Chas. Dixon, &c., and all of these authorities have not been clear about the plant, although known to them. In another quarter it was named "Lady Dixon," "Napoleon III.," but this plant had been in existence long before these names could be applicable. If this is not Miller's Sweet

The Week's Work.

THE KITCHEN GARDEN.

By JOHN DUNN, Kitchen Garden Foreman
Koyal Gardens, Windsor.

Cabbages.—A sowing of Cabbage seed may be made now and another after the lapse of a fortnight; this latter date will be more suitable for the southern counties. For Cabbage seeds, borders are frequently selected which have yielded some early crop, but the results would be better if the seeds were sown in a more open situation, selecting soil that is only moderately rich, and a position where the young plants are not likely to be drawn. After the ground has been dug, it should be trodden firmly as soon as the state of the soil will permit. The drills should be drawn at 1 foot apart, and the seeds sown thinly. It is better to make the seed-bed large than to crowd the plants together, causing them to become thin and weakly. In cases where only small plantations are necessary, the young plants should be pricked off as soon as they are large enough to handle, placing them at distances of 4 inches apart each way. Suitable varieties for autumn planting are Flower of Spring, Ellam's Early, and Offenham. A small sowing of Red Cabbage may be made at the same time, for planting out in autumn. Cabbage plantations, where the heads have already been cut, should have the stumps cleared off, in order that the ground may be prepared for a crop of late Turnips.

Carrots.—A sowing of stump-rooted Carrots should be made on a south border, for supplying roots in November and December. It will be appropriate if these Carrots are made to succeed early Potatoes. Last year our best and cleanest roots, available for use in the winter, were obtained from a sowing made on July 7. The drills should be drawn at 9 inches apart, and should be 1 inch deep. Thin the plants as soon as they are large enough, leaving a space of 4 inches between each plant. Hoe the surface soil frequently between the rows.

Endive.—In order to obtain autumn and early winter supplies, seeds of the Endive known as Round Leaved Batavian should be sown in drills drawn at 18 inches apart. Transplant the seedlings to a sloping border as soon as the plants

are large enough to handle. Make another sowing a fortnight later in a position where protection can be given during winter. If unheated frames are available for them, the plants may be transplanted into the frames, where they can be grown without the frame-lights until the autumn frosts. If the plants are grown in this manner, they will not be so liable to damp off during the winter months as those removed to the pits after they have attained their full size.

Broccoli.—Plants intended for furnishing a supply in late spring should be put out as soon as the ground is available for them, choosing an open situation where the soil is not excessively rich. The ground must be made very firm before the plants are put out, as more failures are due to planting late Broccoli on loose, rich soil than from any other cause. A space of 30 inches is not too much to leave between the plants.

Winter Tomatos.—Sow seeds of Tomatos in a slightly heated pit. During germination and until the plants are large enough for planting into 4-inch pots, they should be kept near to the glass. Later they should be potted into 10-inch pots and placed in a house where they can be given an abundance of air by day and night until they have set full crops of fruit. Following this stage the plants may be removed into warmer quarters in quantities sufficient to maintain a supply of fruits. By this method of culture, Tomatos may be had during the greater part of the winter without much trouble or expense. Place a stake to each plant as soon as it is potted and continue to remove all side shoots. The soil for this crop should consist of turfy loam three parts and leaf-mould one part. Suitable varieties are Kershaw's Premier and Winter Beauty.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burf rd, Surrey.

The East Indian house.—When suspended close up to the roof glass on the south side of this house, the *Catasetums* and *Cynoches* thoroughly enjoy the warmth of the sun and as much light as it is possible to afford them without scorching the young foliage. Both species are now rooting freely and making considerable progress with their new growth. They require to be examined almost every day, so that the best rooted plants and those which are pushing up flower-spikes may be supplied abundantly with water. Prevent water from lodging in the young growths and carefully examine the bases of the pseudo-bulbs for mealy bug, for if these insects once obtain a footing below the compost it is almost impossible to eradicate them until the potting season again comes round. As the *Thunias* pass out of flower, the plants should be placed in a cool house, such as a lightinery or Peach house, where they will be exposed to the sunlight. Any plants which have failed to bloom, and are still growing, should have the apical leaf of each growth pulled out so as to stop all further progress in this direction; the plants may then be treated similarly to those that have bloomed. After being placed in the drier atmosphere, the leaves are liable to become infested with red spider, but that pest is easily kept in check by laying the plants down on their sides about once a fortnight, and well syringing them with warm, strong, soft-soap and water. These plants will require to be watered as long as the leaves remain fresh and green, but, when they commence to change colour, water should be withheld gradually and the plants placed on a dry shelf where the night temperature is about 55°. The *Dendrobiums* are now growing vigorously. The best rooted plants should be afforded abundance of water at the root and a gentle spraying with tepid soft water, well up under the leaves several times a day when the weather is warm and bright. The shading immediately over them should be removed a trifle earlier each afternoon, so as to gradually prepare them for the ripening process. Continue to tie up the young growths and cut off all badly spotted and decayed leaves. Such *Habenarias* as *H. pusilla* (militaris), *H. carnea*, *H. Susanna*, *H. intermedia*, *H. geniculata*, *H. longibracteata*, *H. zambesina*, and *H. ugandae*, which are now in full growth, should be placed well up to the roof glass in this house. Afford a moderate amount of shade, preserve a moist atmosphere around them, and keep them well supplied with water at the root till growth

is finished and the flowers commence to open. *Habenaria rhodocheila*, being now at rest, should be placed in a rather more cool and drier atmosphere, where they may obtain moderate sunshine to ripen the tubers. Examine them about once a week and water lightly those that are quite dry on the surface. Such deciduous Orchids as *Lissochilus giganteus*, *L. purpurescens*, *L. arenarius*, *L. stylites*, *Eulophia nudans*, *E. Guineensis*, *Geodorum purpurescens*, *G. augustum*, *G. dilatatum*, *Habenaria goodyerioides*, &c., that are in full growth, and some already showing their flower-spikes, should be kept thoroughly moist at the root till the flowers are past and the growths commence to die down naturally. Place these plants in a light corner of the house and keep their immediate surroundings constantly saturated.

THE FLOWER GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Hertfordshire.

Dahlia.—The recent showery weather has caused the Dahlias to grow exceptionally freely, therefore tying must be attended to promptly and the growths thinned out where necessary. In the case of Show varieties, the more prominent flowers must also be supported, or many of them will become broken down. Traps must be placed for earwigs. One of the best consists of lengths of broad Bean stalks dried in the sun, some being secured to the stake of the plant with a piece of raffia, and others placed in the foliage. The contents should be blown each morning into a bottle of water. Apply dressings of artificial manure during wet weather, and fork or hoe in lightly.

Gladiolus.—Spikes of Gladiolus provide excellent material for the embellishment of the house when placed in vases sufficiently large for the proper display of the large inflorescences. Where a large quantity is required, and the space necessary is available, it is desirable to devote a border to Gladioli entirely, planting them in rows, though, at the same time, nothing is more effective for the mixed border, or when massed for a bright display. Keep the surface soil aerated by the free use of the Dutch hoe, at the same time stirring in a sprinkling of manure. The plants are gross feeders, and during hot weather they require copious supplies of moisture and stimulants. Staking will be necessary, but the ties must be made loosely, employing just sufficient to prevent the spikes from falling and the flowers from becoming damaged.

Campanula.—Especially suited for massing in beds is *C. persicifolia* and its beautiful forms; also *C. macrantha* and the variety *alba*; *C. latifolia*, *C. van Houttei*, a fine hybrid, with long, blue flowers, and *C. Burghatii*. These require the spikes each secured to neat stakes.

Clematis.—The herbaceous varieties of the Clematis are now flowering freely. They attain a height of from 4 feet to 5 feet. *C. erecta* and its double variety make dense growth, and are now covered with a multitude of white flowers. *C. Dallasii* is similar in habit, and has white flowers of a finer colour and much larger. *C. Algeri* has large, blue flowers, as also has *C. integrifolia Durandii*, but of smaller size; *C. Davidiana*, a Chinese species, produces pale blue flowers of a beautiful form and sweetly scented.

General work. The recent rains have afforded a good opportunity for rolling the drives and walks. Lawns also will derive much benefit if rolled lightly. Hedges of various description and any other shrubs formally trained may now be clipped. Low-growing plants used for carpeting in the bedding arrangements must be pegged down evenly, and the beds kept free from weeds by hand-pulling. Late-sown annuals will require thinning, and a further sowing of Mignonette may be made on a shady border. Remove all decayed flowers on Sweet Peas, to encourage growth and prolong their flowering period. The majority of the Rhododendrons have now passed out of flower, and these should have the seed-vessels removed. Quarters containing such plants as Phlox, Asters, Carnations, Pentstemons, &c., growing freely must be kept neatly tied, and the soil constantly stirred and freed from weeds. Stocks of plants, such as Alpines, &c., especially if in small pots, will need less attention as to watering if plunged to the rims of the pots in ashes contained in frames.

Frames containing unrooted cuttings should be kept close and shaded, and the cuttings may be syringed until they have made roots.

THE HARDY FRUIT GARDEN.

By A. R. SEARLE, Gardener to the Marquis of NORTHAMPTON, Castle Ashby, Northamptonshire.

Summer pruning.—Continue to train-in the shoots upon Plum, Peach, and Pear trees, taking the opportunity at the same time to finally thin the fruits. Where Apples and Pears have set heavy crops, and it is desired to obtain specially fine fruits for exhibition or other purposes, the fruits should be thinned freely. Early varieties of Apples, such as Lady Sudeley, Worcester Pearmain, Irish Peach, Beauty of Bath, etc., frequently set heavy crops, but they fail to ripen fruits of sufficient size and quality for dessert purposes unless thinning is carried out.

Protection of ripening fruits.—Means must be taken to protect all ripening fruits from birds, especially Currants, Cherries, or Gooseberries. Strawberry plants which have fruited and are not required for another season should be dug up and the ground cleaned immediately the crop has been removed. Make sure that all fruits required for preserving are quite dry at the time of gathering, otherwise they will be deficient in flavour and the jam will not keep well.

Sweet Cherries.—As soon as the early varieties are cleared of their crops, the trees should be syringed vigorously with some approved insecticide to thoroughly cleanse the foliage, making sure that all parts of the wood and foliage are well wetted with the mixture.

Insect pests.—These have been unusually prevalent this season, and have caused the expenditure of a large amount of labour. The worst have been the different species of caterpillars. We have employed arsenate of lead freely on fruit trees and Roses, and it has destroyed a large number. Where trees are unusually badly infested with caterpillars, it is almost impossible to save the crop this season, but by persevering in the cleansing operations, a better state of things may be obtained next year.

American blight.—Examine all trees likely to be attacked by the woolly aphis or American blight, and if any be found, rub the affected parts thoroughly with the mixture recommended in a previous Calendar.

Fruit room.—Keep this room well ventilated and as cool as possible so long as it contains any fruit. Later on, when there is little need for the fruit room, the opportunity should be taken to cleanse the whole structure thoroughly. If the building is of the old type, the walls should be lime-washed and the wood-work washed with hot, soapy water. After such treatment, the room will be ready for housing the fruit in autumn.

Grafts.—Examine all the newly-made growths, and if the scions are found to be growing freely, the ties must be loosened. See that the shoots are fastened securely to the stakes, or they will be damaged by winds. Remove any shoots or suckers that form below the point of union.

PLANTS UNDER GLASS.

By JOHN DONOGHUE, Gardener to JOSEPH PICKERSGILL, Esq., Bardon Hill, Westwood, Yorkshire.

Perpetual-flowering Carnations.—The latest plants intended for flowering in the winter and spring should now be repotted for the last time. The earliest batch, which was potted some time ago, have become well rooted; they may be given a top-dressing of some approved chemical fertiliser and alternate waterings of clear soot-water. It is not desirable to pinch any of the flowering spikes later than the end of June, unless the district is favoured with unusually good climatic conditions. Each shoot may now be looped to the centre stake, and further tieings must be attended to at regular intervals as the flowering spikes develop. Take every means to keep the plants free from aphides, which are frequently a great trouble at this season. Old stock plants that were treated according to previous directions, and are now growing in a border outdoors, should now be furnishing flowers.

Souvenir de la Malmaison Carnations.—The varieties of this type are now at their best, and the flowers are particularly grateful in their

beauty and perfume. As the plants pass out of flower, the best of the one-year old specimens may be reserved for repotting into larger pots for cultivation another season. For this potting, a suitable compost is one consisting of yellow, fibrous loam of a rather sandy nature, and used in a rough or lumpy state with a small quantity of peat, and sufficient lime rubble and coarse Bedfordshire sand to keep it porous. A quantity of broken charcoal may also be used for this purpose if it is thought desirable. Select clean pots, 8 to 10 inches in diameter, these being generally large enough for specimen plants, but the cultivator, in determining the size of the pot must be guided by the size and strength of the individual plant. It is necessary to make quite sure that a plant is moderately dry before affording fresh water to the roots. Attention must be given to the layering of stock for raising plants in sufficient time to become estab-

lished before winter. The layering process is best carried out in cool frames or pits. The most unsightly specimens are quite suitable for layering, provided that they have healthy growths. They should be plunged in a bed formed of half-decayed leaves, arranging the plants so that they are placed in a slanting position, in order that the growths may be the more easily layered into the soil. Pick off the leaves from the base, leaving from four to six pairs on each shoot. Make a clean, sharp cut upwards in the centre of the stem, long enough to allow the plant to be layered with the tongue open. The layers should be carefully pegged down into a sandy compost, and in about a month or six weeks they may be expected to be ready for potting into small pots. Replace the lights upon the frames after the completion of the layering process, and keep the atmosphere rather close for a few days, providing shade during bright

sunshine; but at other times as much light should be admitted as possible, and to this end the glass should be kept perfectly clean.

Chrysanthemums.—Cuttings intended for cultivation for decorative purposes must now be repotted into their flowering pots. When this has been done, they should be placed at proper distance from each other on an ash base in a sunny position out-of-doors. Frequent attention must be given to staking and tying. The shoots should not be pinched after the middle of July, unless a contrary practice has proved satisfactory in the particular district.

Winter-flowering plants.—Plants of various species which are being grown expressly for decorative purposes in winter need constant attention to watering, and, in some cases, repotting will be necessary. Every means should be taken to induce the plants to make perfect specimens before autumn.

in the case of rank growths, which would disturb the balance of the trees. A little fresh growth will tend to keep the roots active.

Later trees.—The later trees will require considerable attention as regards tying and regulating the growths. Avoid overcrowding of the branches, removing any badly placed or useless growths. Ventilate the house freely in hot weather, admitting air sufficiently early on bright days to prevent scorching of the foliage.

Fig trees in pots.—Any pot-trees which have been reserved for late cropping have been out-of-doors up to the present, but they should now be placed in a light, airy house; affix rims to the pots and apply a top-dressing. Maintain a moist, genial atmosphere without excessive heat, syringing the trees once or twice daily with a view to securing healthy young growth. These pot trees, with careful attention to cultural details, will maintain the supply of ripe fruit well



FIG. 7.—HERBACEOUS PLANTS AT THE WARREN HOUSE, STANMORE.

(See p. 22.)

FRUITS UNDER GLASS.

By B. GOODACRE, Gardener to Sir ERNEST CASSEL, G.C.B., Moulton Paddocks, Newmarket.

Figs.—Trees that were forced early will now be swelling their second crops. Very little fire-heat is necessary to maintain the requisite temperature at this season, consequently less damping need be done to preserve a moist atmosphere. Large, established trees absorb great quantities of moisture during hot weather, and, in some cases, it may be necessary to soak the borders several times weekly; manure-water and soot-water should be applied to the roots occasionally. Syringing should be stopped when the "eye" of the fruit opens, as advised in previous *Calendars*. At this stage, a little air may be left on at the top of the house during the night. As the trees will be allowed to rest after ripening this second crop, it will be unnecessary to stop the young shoots after the fruit is cleared except

into the winter. Allow each tree ample space and light so that it will make sturdy and well-developed growth; give frequent applications of liquid manure, varied by sprinklings of some approved fertiliser mixed with a little fresh soil.

Melons.—Plant successional plants as required to meet the needs of the establishment. About 12 weeks may generally be reckoned from the time of sowing the seed until the fruit is ripe, allowing a week or two more or less according to the season of the year. Ripe fruits may be kept in good condition for some time if cut and suspended in a cool and airy fruit-room. Avoid over-watering, especially during dull, cold weather. Less stimulants will be necessary than for plants growing in houses, since, owing to the atmospheric conditions not being so well under control, there is often a tendency for the plants to make much useless growth at the expense of their fruit-bearing qualities.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Special Notice to Correspondents.—The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

Letters for Publication.—as well as specimens of plants for naming, should be addressed to the EDITORS, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Local News.—Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Illustrations.—The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c., but they cannot be responsible for loss or injury.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, JULY 11—

United Hort. Ben. & Prov. Soc. Com. meet.

TUESDAY, JULY 12—

Nat. Sweet Pea Soc. Exh. at R.H.S. Hall, Westminster (2 days). Wolverhampton Floral Sh. (3 days).

WEDNESDAY, JULY 13—

Nat. Rose Soc. Sh. at Salisbury. Teddington Fl. Sh. Uxbridge Fl. Sh. Derby Agr. and Hort. Soc. Sh. (2 days). Portsmouth Fl. Sh. (2 days). Hereford and West of England Rose Sh.

THURSDAY, JULY 14—

Nat. Sweet Pea Soc. Inspection of Trials at Sutton Green. Finchley Hort. Soc. Sh.

FRIDAY, JULY 15—

Nat. Sweet Pea Soc. Inspection of Trials at Kelvedon and Mark's Tey.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich—63°.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, July 6 (6 P.M.): Max. 59°; Min. 57°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, July 7 (10 A.M.): Bar. 30; Temp. 59°; Weather—Overcast.

PROVINCES.—Wednesday, July 6; Max. 59° Mid. Essex; Min. 50° Scotland N.E. Coast.

SALES FOR THE ENSUING WEEK.

FRIDAY—

Imported Cattleya Mossiae, also established Orchids in variety, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

Lime-Sulphur Sprays.

In our issue of June 11 last we referred to the injurious effects of Bordeaux mixture on the young foliage of some Apple trees in Kent, and suggested that in treating the more tender varieties, especially where spotting of the fruit by spraying is to be feared, it may be found advantageous to use lime-sulphur washes.

It may be useful, therefore, to point out that Mr. W. M. Scott, the officer in charge of orchard-spraying experiments in America, has carried out a series of trials on the value of lime-sulphur sprays as substitutes for Bordeaux mixture. The results of Mr. Scott's experiments, published in Circular No. 54 of the U.S.A. Bureau of Plant Industry, indicate that lime-sulphur sprays are efficient substitutes for Bordeaux mixture in controlling leaf-spot and Apple scab; but that they are less efficacious than the latter with respect to Apple blotch (*Phyllosticta solitaria*) and bitter rot. The solution recommended, as the result of extended trials, is one containing 4 lb. of sulphur to 50 gallons of water, which strength may, of course, be prepared from commercial lime-sulphur by the addition of water. It may be as well to repeat what has been mentioned in previous references to lime-sulphur washes, that they may be prepared by boiling lime and sulphur (2½ lb. lime and 5 lb. sulphur) in

a small quantity of water for about three-quarters of an hour, and making up to 50 gallons by adding water to the boiled preparation. A further point established by Mr. Scott's experiments is the fact that the spray is rendered more useful by the addition of arsenate of lead at the rate of 2 lb. to 50 gallons of lime-sulphur solution. No damage to foliage or fruit results from the addition of this form of arsenical insecticide, whereas the addition of Paris green may cause damage to foliage and fruit. Though no formula can be guaranteed to be universally successful, Mr. Scott recommends, in places where scab is prevalent, spraying with lime-sulphur-arsenate of lead four times—(1) just before the flowers open, (2) as soon as the petals fall, (3) three to four weeks later, (4) six to seven weeks after the third spraying. By this spray-system, Apple scab, leaf-spot, and Codling moth are controlled. Where bitter rot (*Glomerella rufomaculans*) is prevalent, the spray-system should be modified, the lime-sulphur-arsenate-of-lead spray being used for the first two (or three) sprayings, and Bordeaux mixture plus arsenate of lead being substituted for the fourth spraying, and, if necessary, used for further spraying at intervals of two to three weeks.

Mr. Scott has demonstrated that lime-sulphur sprays provide admirable means of protecting the Peach from Peach brown rot (*Sclerotinia fructigena*) and scab (*Cladosporium carpophilum*), which fungi are responsible for an enormous amount of damage to the fruit in America. He finds that both diseases are controlled by three sprayings with lime-sulphur solution, the first given three to four weeks after the petals fall, the second three weeks later, and the third about a month before the fruits ripen. The solution should be 8—8—50 self-boiled; that is, 8 lb. of lime, 8 of sulphur, and 50 of water. If insect pests are feared, 2 lb. of arsenate of lead should be added. As our readers will remember, a self-boiled lime-sulphur solution is one in which the heat generated by the mixing of lime and water is used instead of fire-heat in the preparation of the spray-fluid. It is best prepared in large quantities, say, enough for 200 gallons. For this, 32 lb. lime and 32 lb. sulphur are required. The quicklime is placed in a barrel and water added to cover it. As the lime begins to slake, add the sulphur, passing it through a sieve. Stir constantly, and add water enough to form, first a thick, then a thin paste. After the heat generated by the slaking lime has boiled the liquid for a few minutes, add water to cool. The concentrated solution thus obtained is strained into the spray tank, and diluted to the proper strength by the addition of water.

Though it is too soon yet to dogmatise, we are of opinion that lime-sulphur sprays will prove of great value to the fruit-grower. Those growers who are experimenting with this mixture will be doing a good service if they will keep horticulturists informed, through the medium of these columns, of the results which they obtain.

Stinking Smut.

It is held generally that, of the smuts which affect cereals, some gain access to the plant in the seedling stage, and some actually infect the developing embryos whilst they are still in the ear of the parent plant. In

the former case the smut-spores, finding their way to the surface of the grains used for seed, are sown with that seed, germinate as the seed germinates and produce secondary spores, the germ tubes of which obtain access to the young plant. The preventive measures adopted in such cases consist in steeping the seed in fungicides, which destroy, more or less thoroughly, the smut-spores adhering to the coats of the grains. Inasmuch as this method, to be successful, requires that the fungicide used shall not only destroy the smut-spores but shall leave the seed uninjured, there is evidently plenty of room for experiment as to the relative values of different kinds of fungicides.

Such a series of experiments has been conducted recently by Messrs. G. L. Sutton and R. G. Downing at the Cowra Experiment Station (Australia). The results, published in a recent issue of the *Agricultural Gazette* of New South Wales, should, if confirmed, prove of considerable value to the agriculturist whose Wheat crop is liable to attack by stinking smut (bunt). The conclusion to which the experiments of Messrs. Sutton and Downing point is that a steep of 2 per cent. blue stone (copper sulphate), to which enough salt is added to make a concentrated solution (about 33 per cent.), is more effective than any other in destroying the spores of the fungus, and is also less harmful to the seed.

Thus, seed steeped in 2 per cent. copper sulphate and salt yielded .8 per cent. of bunt plants as against 2.5 per cent. yielded by seed steeped in the copper sulphate alone. Moreover, the amount of seed destroyed by the copper sulphate and salt steep was only 8.7 per cent., whereas, after being steeped in copper sulphate only, the mortality among the Wheat seed was 30 per cent.

We hope that further experiments with this mixture will be made, and that, not only as a steep, but also as a spray-fluid.

OUR SUPPLEMENTARY ILLUSTRATION gives a view of the formal Dutch garden at the Warren House, Stanmore, the residence of Mrs. BISCHOFFSHEIM. The development of the estate has been carried out with a view to introducing as much variety as possible, consistent with the preservation of the old-time, sylvan beauties of the place. With the exception of the topiary garden, there are no strictly formal arrangements. The borders of hardy flowers (see fig. 7), Alpine garden, and the long stretches of flower beds around the golf links are delightful features, whilst the Rose garden, with its beautiful arrangement of Rambler Roses, in addition to those of other types, has been formed in the most natural manner possible, and, with a view to obtaining a variety of design. No greater contrast in garden scenery is possible than to pass through the Dutch garden, along the Pine walk, with its stately Pines towering over the clumps of Rhododendrons, to the woody glades which enclose the estate and are still in their pristine condition. Mr. MCINTYRE, the gardener at the Warren House, is an adept at topiary gardening, taking special interest in the work, but the many improvements which he has carried out in the grounds generally demonstrate that his interest in this form of gardening does not encroach on the many other duties connected with the management of this extensive garden. A view of the dwelling-house is given in fig. 6.

JAPAN-BRITISH EXHIBITION.—As was stated last week, the Royal Horticultural Society sent a deputation, on the 30th ult., to award certain silver cups to garden exhibits shown by Japanese exhibitors at the Japan-British Exhibition. The cups were awarded to the following exhibitors: Mr. KEIJIRO OZAWA, Tokyo, for the design of the "Garden of Peace" and the "Garden of the Floating Islands"; Mr. HANNOSUKE IZAWA, Tokyo, for the construction of the "Garden of Peace" and the "Garden of the Floating Islands"; the TOKIO YEN, Sheiba Park, Tokyo, for the design and construction of two miniature gardens; the YOKOHAMA NURSERY CO., Yokohama, for a collection of dwarf trees in pots; the YOKOHAMA NURSERY CO., Yokohama, for a specimen dwarf tree (*Thuya obtusa*, golden variety, 125 years old); Mr. S. HAYASHI, Kioto, for a pair of bronze garden lamps; Mr. SENKER AGAWA, Kioto, for an imitation dwarf Pine, used in ceremonies; NIPPON YUSEN, Kaisha, for a garden of artificial flowers; the GIRLS' TECHNICAL SCHOOL, Tokyo, for an arrangement of artificial flowers.

JAPANESE VISITORS AT THE HOLLAND HOUSE SHOW.

—On Wednesday last the president and Council of the Royal Horticultural Society entertained at luncheon a number of Japanese horticulturists, together with other Japanese gentlemen holding official positions in this country. In proposing the toast of "Our Japanese Guests," Sir TREVOR LAWRENCE referred to the cordial relations which exist between the Japanese and the people of this country. He stated that, although it had never been his good fortune to visit Japan, several of his intimate friends had done so, and it was with pleasure he had heard them speak of the most cordial welcome they had received in that country. The Japanese were a people of a sunny and happy nature, possessing a spontaneous gaiety of which we ourselves were scarcely capable. They possess an intense love for their own country, a special attraction of those eastern islands being the beautiful scenery. The Japanese flora had contributed some of our most valued garden plants, including the beautiful *Iris Kämpferi*, which, he was informed, was cultivated as well in this country as in Japan. The beautiful *Wistaria* adorned the walls of cottages in Britain, and he thought nothing was more beautiful in art than a view of a Japanese teahouse enveloped in a gorgeous covering of *Wistaria*. Beside the *Wistaria* and *Irises*, Japan had given us many beautiful *Azaleas*, *Maples*, *Styrax japonicum*, *Cryptomerias* and other beautiful plants. Dr. MANO, who responded, referred again to the good feeling which existed between British horticulturists and those in Japan, instancing the Japanese gardens at Shepherd's Bush as an alliance between Japan and this country. His own land supplied the idea and the plants, whilst Britain contributed the site and the materials for the building of the rockery. The toast of the "Royal Horticultural Society" was proposed by his Excellency the Japanese Ambassador, Mr. TAKAOKI KATO, who gave a résumé of the work of the Society. Sir DANIEL MORRIS replied to the toast with a capital speech. He was certain that when the future history of the R.H.S. was written no name would be more prominent than that of the present secretary, Rev. W. WILKS, whom all regretted was absent on this occasion through ill-health. Several of the most notable men in the scientific world, and especially botanists, had been associated with their Society. Sir JOSEPH HOOKER was still chairman of the Scientific Committee, and he was pleased to see with them Colonel PRINCE, Dr. RENDLE, and Professor BATESON. The Society had instituted a laboratory at Wisley for training their students in scientific horticulture, and their

young men would no doubt be afforded an opportunity to complete their studies at the Innes Horticultural Institution under the tuition of Professor BATESON. Sir ALBERT ROLLIT proposed the toast of the president, which was accepted with acclamation.

FLOWERS IN SEASON.—Messrs. WM. PAUL & SONS have sent us blooms of some new Roses, including seedlings raised by them at Waltham Cross. The first place must be given to the variety named Juliet, a hybrid Briar of most attractive colouring. The distinctive character of the variety is found in the two distinct shades on the inner and outer sides of the petals. The interior is coloured reddish-orange, the exterior being old gold. In addition, the flower possesses a beautiful form, and a charming fragrance. It is one of the most pleasing novelties amongst Roses, and is sure to become a popular variety. The others include the Hybrid Tea variety named Alice Cory-Wright, with large, pink blooms, very broad at the base, the tips of the petals in the unopened flowers narrowing to almost a point. As a bold, showy Rose, it will be valuable alike for the garden and the show bench, its robust growth providing an additional claim. Bianca is a Hybrid Tea variety with creamy-yellow base and rose-flushed tips, this colour appearing very pretty in the centres of the buds. The blooms are somewhat narrow and long. Another beautiful, Hybrid Tea variety was seen in an unnamed seedling of purplish-rose colour. This has all the attributes of a good Rose, and will no doubt become a favourite in gardens. An unnamed H.T. seedling of purplish rose colour was also very attractive.

SWEET PEA OUTINGS.—We are asked to remind our readers that on Thursday, the 14th inst., the members of the National Sweet Pea Society will inspect the trials of Sweet Peas at The Times Experimental Station, Sutton Green, near Guildford. The inspection will be followed by a visit to the gardens of Sutton Place, the residence of Lord and Lady Northcliffe. On the following Friday, there will be an outing to Messrs. HURST & SON's trial grounds at Fering, Kelvedon, Essex, on the invitation of the president, N. N. SHERWOOD, Esq., V.M.H.; and to Messrs. DOBBIE & CO.'s nurseries at Mark's Tey.

EXHIBITION OF FORCED SHRUBS AT BOSKOOP.—An exhibition of forced shrubs will be held at Boskoop in 1911, on the occasion of the 50th anniversary of the Pomological Society of Boskoop (Holland), the members of which formerly occupied themselves principally with the cultivation of fruit trees, but have now for years past applied themselves almost exclusively to the growing of shrubs and Conifers. The principal firms of Boskoop and its environs will collaborate to make the exhibition thoroughly representative of the great industry of the district, that of the cultivation of shrubs for forcing. The exhibition-building will occupy a surface of 2,600 square metres, and the show will take place in the first half of the month of April.

THE POTATO BLIGHT.—It is reported that the Potato blight has made its appearance in some districts in the west and south-west of Ireland, especially in the Charlestown district of county Mayo.

MR. ROBERT NEWSTEAD, Lecturer in Economic Entomology and Parasitology at the Liverpool School of Tropical Medicine, and a member of the Entomological Research Committee of the Colonial Office, has gone to Malta to investigate the problem existing there of the menace to health by the sand-fly.

NURSERY EMPLOYEES OUTING.—The members of the newly-formed recreation club of Messrs. BARR & SONS held their first annual outing on Saturday, July 2, at Arundel. On their arrival, the members indulged in cricket and other amusements. Testimony was given at the luncheon to the good feeling which exists between the heads of the firm and the employés.

THE CAMBRIDGE BOTANIC GARDEN.—We doubt whether any English botanic garden—Kew, of course, always excepted—contrives to render such valuable services to science as the Cambridge Botanic Garden. That this is the case is due in large measure to the energy and breadth of view of the Curator, Mr. IRWIN LYNCH. We learn from the brief annual report that the gardens have not only continued to supply enormous numbers of specimens—no fewer than 108,000—for botanical purposes, but that they have rendered important aid also to the Reader in Forestry (Dr. HENRY) and to the plant-breeding experiments which are being carried on by various members of the University. Nor, in rendering material assistance to the cause of science, does the Curator lose sight of the main functions of a botanic garden. Thus the list of "Plants of Special Interest" contained in the report demonstrates that the Cambridge Botanic Garden well maintains the interest of horticulture.

WORMS IN POTS.—The Rev. HILDEBRIC FRIEND, St. Asaph, Great Malvern, is preparing for the Ray Society a "Monograph of British Earth and Water Worms." Inasmuch as it is very desirable that accurate information should be supplied therein respecting the species which are harmful, Mr. FRIEND will be greatly obliged if gardeners and others will send him specimens of living worms for identification.

THE GERMAN DENDROLOGICAL ASSOCIATION.—The programme of the 19th annual meeting of the German Dendrological Association has been completed, and includes items of considerable interest. The association will meet in Metz on August 6, and, after visiting Colombey, Lorry and Tignomont, they will proceed to Plantières in order to inspect the arboretum of SIMON LOUIS FRÈRES. Thence the association travels to Nancy, paying a visit to Messrs. LEMOINE & SONS' nursery, and so on to Maxéville, Malzéville. On August 9 there will be an excursion to Montigny, and on the 10th the members of the association travel to Brussels and bring their excursions to a close on Friday, August 12, by a visit to the Royal Gardens at Laeken. Among the papers which will be read in the course of the meeting are the following:—"The Ulmaceae in the Service of the Landscape Gardener," by Herr SCHINABECK; "The Germination-capacity of Seeds of Exotics Planted in Japan," by Herr HERRE; and "Japanese Dendrology," by Herr UNGER.

WORSHIPFUL COMPANY OF GARDENERS.—The members of this ancient livery celebrated, at a banquet on Friday, July 1, at the Savoy Hotel, Strand, the installation of the Master, Mr. CHARLES BAYER, who holds office for the second year in succession. The guests were seated at 15 separate tables, each of which was lavishly decorated with a distinctive flower by Messrs. PIPER, of Bayswater. Speeches were made by Mr. BAYER, Mr. SHERWOOD, Mr. W. F. HAMILTON, K.C., and Sir THOMAS R. DEWAR. In replying to the toast of "The Gardeners' Company and the Master," Mr. BAYER said his election to the office of Master of this ancient guild was one of the proudest events of his life.

ROYAL HORTICULTURAL SOCIETY.

Summer Exhibition at Holland House.

JULY 5, 6.—The exhibition of the Royal Horticultural Society, held on these dates in the Park at Holland House, Kensington, was the finest ever held in these grounds. It formed the 9th summer show of the Society, eight of which have been held at Holland Park and one in the grounds of the Royal Hospital, Chelsea. With regard to the exhibits, it may be admitted that there were few outstanding novelties, but the general displays were of a very high standard of excellence. We may select for special mention Messrs. Wallace's Iris garden and rockery, Mr. Amos Perry's show of Delphiniums, Messrs. Sander & Sons' Orchids, Lord Aldenham's collection of vegetables, Messrs. Jas. Veitch & Sons' collection of choice greenhouse and stove plants, and the Duke of Portland's exhibit of fruits. The Iris garden and rockwork designed by Messrs. Wallace displayed characteristics that are very seldom indeed associated with temporary exhibitions of this character, whilst the quality of the flowers borne by the Japanese Irises was remarkable. There were also many good displays of Orchids, Roses, Sweet Peas, Carnations, and fruit trees in pots.

The COUNCIL awarded no fewer than 16 Gold Medals, and this fact alone affords some idea of the high quality of the exhibition. In addition to the plants, fruits, and vegetables, there was a very considerable display of implements and sundries employed in gardening operations.

The FLORAL COMMITTEE granted one First-class Certificate and six Awards of Merit, and the ORCHID COMMITTEE two First-class Certificates and three Awards of Merit.

The FRUIT AND VEGETABLE COMMITTEE made no award to a novelty. At the luncheon offered to the Committees and judges on Tuesday, the President, Sir Trevor Lawrence, Bart., expressed the indebtedness the Society owed to Mary Countess of Ilchester for her exceeding kindness in lending her beautiful grounds for the exhibition, and he expressed regret that the favour could not be expected in the future.

The attendance on the first day was more satisfactory than on any previous occasion at Holland House, and, notwithstanding the threatening skies, there was no rain until 7 p.m. On the second day rain fell at intervals. Thanks are due to the secretaries, the superintendent, Mr. S. T. Wright, and the Vincent Hall staff, including Mr. Frank Reader and Mr. Plowman, for their efforts to make the arrangements as complete as possible. A matter over which they may have had no control, namely, the light-excluding character of the canvas employed for the tents, called forth a great amount of criticism, which, we are bound to add, was perfectly justifiable. On the second day of the exhibition a luncheon was given in honour of the Japanese horticulturists now visiting this country in connection with the Japan-British exhibition. The proceedings are referred to on another page.

Floral Committee.

Present: W. Marshall, Esq. (Chairman), and Messrs. W. Barr, J. F. McLeod, Jas. Hudson, F. Page Roberts (Rev.), Chas. Dixon, T. W. Turner, H. J. Jones, Herbert J. Cutbush, W. P. Thomson, E. H. Jenkins, W. J. James, G. Reuthe, John Green, Chas. T. Druery, W. G. Baker, James Walker, R. C. Reginald Nevill, W. Howe, and R. Hooper Pearson.

GROUPS OF PLANTS.

Messrs. JAMES VEITCH & SONS, King's Road, Chelsea, made a magnificent display with stove and greenhouse plants, the exhibit having a frontage of nearly 40 feet and a depth of 13 feet. This space was filled with choice ornamental-leaved species, set off by banks of Orchids, *Kalanchoe flammea*, *Anthurium Scherzerianum*, and *Camass*. The beautiful colouring in the leaves of *Anthuriums*, *Caladiums*, *Codiaeums*, *Dracena Brantii*, *Marantas* (M. Sanderiana being especially fine), *Begonia Rex*, *Heliconia illustris*, *Tillandsia Massangeana*, *Alocasia mortefontaineensis*, and similar species was the subject

of frequent remark. The group was broken by tall plants of *Aralia Veitchii*, and *A. elegantissima*, with superb examples of *Nepenthes*, the varieties Dr. John McFarlane, *Diadem*, and *Curtisii* superba being the best of these. Grouped about the base of the stands were plants of *Solanum Wendlandii*. It was a noteworthy display in a tent of superb exhibits, the arrangements denoting a "master hand" in staging.

Mr. L. R. RUSSELL, Richmond, showed a batch of stove and greenhouse foliage plants. It was a beautiful display, there being choice specimens of *Caladiums*, *Marantas*, *Dracenas*, *Anthuriums*, *Acalyphas*, *Nephtytis picturata*, *Clerodendron fallax* in bloom, *Gloriosa Rothschildiana*, and others of equal beauty, with edging of *Nertera depressa* and *Bertolonias* in variety.

Messrs. R. & C. CUTHBERT, Southgate, presented a large group of greenhouse flowering plants and Roses. There were *Liliums*, including fine examples of *L. lanciflorum album*, *Crasula coccinea*, *Verbena Miss Willmott*, *Hydrangeas*, *Humea elegans*, and *Spiraea Queen Alexandra*, blended in a fine arrangement, with a border of *Marguerite Southgate*, a compact, dwarf-habited variety.

FERNS.

Messrs. H. B. MAY & SONS, The Nurseries, Upper Edmonton, made the largest exhibit of Ferns, having a grand display of the most ornamental stove and greenhouse varieties, all alike remarkable for the high culture they displayed. Notable plants were *Gymnogramme flavescens* var. *Cordreyi*, *Platycerium Cordreyi*, *Polypodium Videnii* (elegantly divided in the long pinnae), *Nephrolepis Marshallii* (the best of the plumose varieties of *N. exaltata*), *Lomaria attenuata* (showing tinting in the young fronds), *Adiantum cardiophyllum*, and *Nephrolepis elegantissima compacta*. In another tent, Messrs. MAY showed hardy Ferns in variety.

Mr. H. N. ELLISON, West Bromwich, showed varieties of Ferns, having a good selection of decorative sorts.

ROSES.

Messrs. WM. PAUL & SON, Waltham Cross, Hertfordshire, had a magnificent display. It was arranged in the largest tent, and was a veritable bed of Roses, all of magnificent quality, with sufficient Weeping and Rambler plants to afford relief. The blooms were arranged in baskets, each with one variety only, so that the merits of the flowers could be well observed. In the centre was a stand of the inimitable *Juliet* (see fig. 9) that received a First-class Certificate. Others of great beauty were *Warrior*, *Mme. Ravary*, *Liberty*, *Lady Ashtown*, *Belle Siebrecht*, *Joseph Low*, *Lyon Rose* and *Laurent Carle*.

Messrs. PAUL & SON, the Old Nurseries, Chess-hunt, showed a large and glorious display of Roses, having a back row of Rambler kinds, which encroached towards the front in the centre. The main display was of beautiful bunches of large H.T., T., and H.P. kinds. Shower of Gold is a pretty variety suitable for massing, apparently of the *Wichuraiana* type. The H.T. *Marquise de Sinety* is charming in both shape and colouring, which is gold flushed with rose.

Mr. CHAS. TURNER, Slough, staged standard Roses of *Polyantha* varieties, having a number of vases beneath containing large-flowered sorts. Some Ramblers were trained umbrella-fashion, those of Dorothy Perkins being especially pretty. The vases contained a good selection of popular kinds and a few novelties, including a velvety-red variety named Mrs. G. Henslow. Mr. TURNER had also a bank of Carnations, the variety Mrs. Trelawny, a "Malmaison" approaching a scarlet shade, being shown in large numbers as a centrepiece, with *Maggie Hodgson*, *Old Blush*, *Thora* (white), and *Princess of Wales*. *Lady Middleton* is a pretty pink variety striped with darker pink.

Messrs. STUART LOW & CO., Bush Hill Park, Enfield, staged *Gerberas*, *Hydrangeas*, *Metrosideros floribunda*, and an exquisite exhibit of

Roses. The Roses were beautifully displayed, not so thickly as to cause confusion, and with relief of *Adiantum* Ferns between. Such beautiful sorts as *Richmond*, *Mme. Abel Chatenay*, *Lyon Rose*, *Frau Karl Druschki*, *Harry Kirk* (creamy-yellow), *Betty*, *Mme. Segond Webber*, and *Countess of Gosford* were prominent in the display. Adjoining the Roses, the same firm showed an equally fine display of Carnations, set up with much taste. The new coppery-red "Malmaison" Lady Mary Hope was conspicuous. Others shown finely were *Princess of Wales*, *The Colonel* (cherry-red), *Maggie Hodgson*, *Irene* (a fine pink Malmaison), and *Sir Evelyn Wood* (of a deeper pink than the last-named).

Messrs. HOBBS, LTD., Dereham Nurseries, Norfolk, showed an imposing group of pillar Roses as standard, weeping, bush and balloon-trained plants. They had also blooms of *Tea*, *Hybrid Tea*, and other large varieties along the front of the exhibit, the whole being relieved with *Adiantum* Ferns.

Roses were well shown by Messrs. B. R. CANT & SONS, Colchester, the season being exceptionally favourable for Roses out-of-doors. Such beautiful sorts as *Capt. Hayward*, *Lyon Rose*, *Mrs. T. Roosevelt*, *Avoca*, *Suzanne Marie Rodocanachi*, *Mrs. John Laing* and *Hugh Dickson* were displayed in large batches with numerous other sorts. In the centre was a noteworthy stand of the beautiful semi-double *Rose du Barri*, of the shade indicated by the name. *Lady de Bathe*, cream, flesh-tinted, is a new variety.

THE KING'S ACRE NURSERY CO., Hereford, made a bold display with Roses, having tall epergnes filled with choice blooms. Two of the finest noticed were *Liberty* and *General McArthur*.

Messrs. R. HARKNESS & CO., Hitchin, displayed a selection of Roses, having epergnes filled with choice sorts, from which, at the back, were arranged arches of trailing kinds.

Messrs. GEO. JACKMAN & SON, Woking, showed a big batch of Roses, amongst which we noticed beautiful examples of *Marquise de Sinety*, *Irish Elegance*, *Lady Ashtown*, *Countess of Gosford*, *Harry Kirk*, *Mme. Melanie Soupert*, and others of equal beauty.

Messrs. ALEX. DICKSON & SONS, Newtownards, showed Roses of superb quality, having bold vases of such elegant sorts as *Mrs. Arthur Munt*, *Dorothy Page-Roberts*, *Theresa*, *Mrs. Leonard Petree*, *Mrs. Foley Hobbs*, *Mrs. Fred Straker*, and *Viscount Carlow*.

Messrs. HUGH DICKSON & SON, Belfast, also showed some admirable Roses, in which the beautiful white single kind named *Elegans* was a prominent feature. They had an epergne filled with a fine dark-coloured Rose named *Leslie Holland*, also stands containing good blooms of *Mrs. P. H. Coats*, *Frank Thorpe*, *Miss Cynthia Forde*, *Lady Pirrie*, and several others of merit of their own raising.

Messrs. FRANK CANT & CO., Colchester, also showed Roses finely, having many boxes filled with blooms of one variety, none being more beautiful than the popular *Lyon Rose*.

CARNATIONS.

Messrs. W. CUTBUSH & SON, Highgate, London, N., filled one corner of the large marquee with a charming exhibit of Carnations set in a ground of *Polyantha* Roses, backed with *Codiaeums*, *Palms*, *Cordylines*, *Bamboos*, and green foliage plants. They showed their large-flowered Carnation named after *Lady Coventry*, also the beautiful *Mercia* (salmon), *Lady Nunburnholme* (orange-red), *Marmion*, *Enchantress*, *Lady C. Waring* (a yellow-ground fancy), *King Arthur* (scarlet variety, exceptionally fine), *Countess of Onslow* (mauve and pink, with a beautiful scent), *The Queen* (terra-cotta, a choice display of this charming sort), *Dragut* (scarlet), *Maggie Hodgson* (the darkest of the Malmaison section), and many more. Amongst the Roses we noticed *Jessie*, a *Polyantha* variety, with

scarlet flowers. The disposition of the subjects in the group was very cleverly achieved.

Mr. CHAS. BLICK, The Warren Nurseries, Hayes, Kent, showed border, tree, and Souvenir de la Malmaison Carnations. Amongst the border kinds we noticed John Knox (crimson-maroon), Oriel (a fancy, with orange-red suffusion), John Ruskin (a rose-edged yellow-ground Picotee), Micawber (a mauve and yellow fancy), Mrs. E. Martin Smith (white, very fine), Pathfinder (a crimson fancy), and David Abercrombie (a large bloom with rose and yellow ground). There was also a vase of seedling varieties, amongst which were many good things as yet unnamed.

Mr. C. ENGELMANN, Saffron Walden, staged vases of Carnations, in which the dark-crimson Carola figured prominently. There were, besides, excellent blooms of Enchantress, Aristocrat, Mrs. T. W. Lawson, Victory, Winona, Pink Delight, and many more.

A splendid group of Carnations, mainly comprised of Souvenir de la Malmaison varieties, was shown by C. F. RAPHAEL, Esq., Porter's Park, Shenley (gr. Mr. A. Grubb). In the middle of the group, was a bank of plants of King Oscar variety, and in rows outside this were Lady Mary Hope, Britannia, Princess of Wales, Lady Coventry, and other popular kinds. The plants had as many as ten or a dozen good blooms on each; one-year-old specimens of Britannia had almost as many blooms.

Mr. H. BURNETT, Guernsey, showed Carnations, having an imposing display of these beautiful flowers in nearly all the popular sorts.

Displays of Carnations were also shown by Mr. BERTIE E. BELL, Guernsey; Mr. H. LAKEMAN, Thornton Heath, Surrey; Mr. A. F. DUTTON, Iver, Buckinghamshire; E. J. JOHNSTONE, Esq., Groombridge, Kent (gr. Mr. A. T. Paskett); Messrs. R. H. BATH, LTD., Bath; varieties of Roses and Delphiniums were associated in this exhibit.

BEGONIAS AND GLOXINIAS.

MESSRS. BLACKMORE & LANGDON, Twerton Hill, Bath, seemed to eclipse all their former efforts in displaying Begonias. They had a most magnificent exhibit of these plants, the large specimens having many fine blooms on each. In front were suspended baskets of trailing kinds, such as Mrs. Bilkey, Carminia, Alice Manning, Gladys, and Fleur de Chrysanthème; which was the most beautiful of these it would be difficult to estimate. In the main group were many lovely frilled flowers in most charming shades.

A selection of tuberous-rooted Begonias was also displayed by Mr. A. LL. GWILLIM, Cambria Nursery, New Eltham, Kent. Avalanche (white), Evening Glow (rosy-red), Sultan (reddish-orange), Mrs. H. Harris (salmon), and Margaret Gwillim are a selection.

MESSRS. THOS. S. WARE, LTD., Feltham, showed Begonias of excellent quality. They also suspended baskets of trailing sorts in front depended from tall, iron standards. The quality of these tuberous-rooted Begonias was of a high standard, and it was regrettable the heavy canvas of the tent did not allow the tints to be seen to the best advantage. Nothing could surpass the exquisite variety of soft-pink tint named after Lady Cromer; cristata flora plena is a crested kind of salmon-rose tint, Mary Pope (white), Lady Faudel Philips, Sonning Joy, Carmine, Mrs. A. P. Brandt (flesh-tinted), and Miss Beatrice Pardy (white) are a few of the more notable sorts displayed.

MESSRS. JOHN PEED & SON, West Norwood, showed a bank of Carnations and a fine group of Caladiums. Of these latter plants, there were large, well-coloured examples of W. E. Gladstone (reddish, with lighter veins), Candidum (silver, with green veins), Mrs. Harry Veitch (rose, green and silver), Henry Dixon (pale greenish, spotted with red), and other well-known sorts. Messrs. JOHN PEED also exhibited a batch of Gloxinias set in a bank of Ferns and Asparagus foliage.

MISCELLANEOUS PLANTS.

MESSRS. JAMES VEITCH & SONS had a varied and imposing display of greenhouse flowering plants. It formed a showy and attractive exhibit, the high quality of the plants, many of which were new, being a notable feature. The flowers of the various subjects provided a wide range of colours that gave opportunity for skilful staging. Thus a bank of yellow Calceolaria

Clibranii was faced with the blue-flowered Sollya Drummondii, in front being a free-flowered Hibiscus named subvirescens. The Streptocarpus were magnificent; there were also Kalanchoe flammea, Solanum Wendlandii, a bank of Cannas with beautiful Exacum macranthum most profusely bloomed; also Gloxinias, a large group of Carnations, and splendidly-grown Fuchsias, some of these being standard plants.

HON. VICARY GIBBS, Aldenham House, Elstree (gr. Mr. Ed. Beckett), showed a comprehensive collection of Cape Pelargoniums.

MESSRS. SANDER & SON, St. Albans, exhibited a group of their new Marguerite Mrs. F. Sander, that well sustained the high reputation this novelty gained at the Temple Show.

MR. VINCENT SLADE, Taunton, showed Zonal Pelargoniums in variety.

M. EMILE VERCAUTEREN, Melle, Ghent, Belgium, showed a variegated Dracena named Souvenir de François Buysse.

especially those of the varieties Blush Rambler and Dorothy Perkins. Amongst the Carnations we noticed a new variety of the Souvenir de la Malmaison type named Charles Darwin. Mr. PAGE also displayed large plants of his new scarlet Zonal Pelargonium named His Majesty.

MR. FRANK LILLEY, Guernsey, displayed a large group of Gladioli, including the new variety King Edward VII. He also showed Brodiaeas and Ismeme calanthina grandiflora.

COLONEL LOCKWOOD, Romford, Essex (gr. Mr. G. Craddock), exhibited a group of Trachelium caeruleum.

VIVIAN PHILLIPS, Esq., Orpington (gr. Mr. T. Hobbs), staged a group of Petunias.

MESSRS. CARTER PAGE & CO., 53, London Wall, London, showed a big collection of Dahlias, principally of Cactus-flowered varieties, also bunches of Zonal Pelargoniums, and an assortment of Violas and Pansies.

SWEET PEAS.

These flowers were very numerous, some of the leading growers having extensive collections. One of the most noteworthy exhibits was made by Messrs. SUTTON & SONS, Reading, who displayed nearly 200 varieties, all in first-class condition. These occupied a table opposite to their exhibit of culinary Peas, between them being a pergola entwined with Smilax, and having dainty bunches of Sweet Peas hanging from the middle in baskets. Besides a selection embracing most of the standard varieties, they had numerous seedlings. One of these, shown under No. 323, was of great promise. The flowers are a shade of rose on a white ground.

Another large exhibit of these flowers was made by Miss HEMUS, Upton-on-Severn. The varieties in this exhibit were mainly of Miss HEMUS's raising, several of which are exceedingly popular. There were also several novelties, some of which we have already noted in our accounts of previous exhibitions this year.

MESSRS. S. BIDE & SONS, Farnham, showed a representative collection of Sweet Peas, having excellent vases of well-known varieties.

MESSRS. JAMES CARTER & CO., Holborn, made an attractive display of Sweet Peas in their special tent, where they had also some fine Begonias, well-flowered Gloxinias, big blooms of Streptocarpus, coloured Spiraeas, with Humea elegans, Palms, Ferns, and other greenery for relief, the whole constituting a pretty display.

MESSRS. DOBBIE & CO., Edinburgh, and Mark's Tey, Essex, showed a comprehensive collection, including their novelties Sunproof Crimson, Edron Beauty, and Isabel Malcolm. Besides these they showed a great number of new and standard sorts, amongst which were large, finely coloured flowers of Etta Dyke, Masterpiece (rosy-lavender), Mrs. Chas. Foster, John Ingman (shown superbly), James Grieve, Evelyn Hemus, Nora Unwin, Mrs. A. Ireland and Rosie Adams.

MESSRS. G. STARK & SON, Great Ryburgh, Norfolk, showed a bold group of their rose-red variety named Maggie Stark, also a fine white kind named Florence Wright, as well as a general collection.

MESSRS. JARMAN & CO., Chard, exhibited a big batch of their new variety of Sweet Pea named Mrs. Townsend, in conjunction with their display of Centaureas and Carnations. The Sweet Pea is tinted mauve on a white ground.

MESSRS. E. W. KING & CO., Coggeshall, had an extensive display of Sweet Peas, such choice sorts as Evelyn Hemus, Ellen Lewis, Cerise Paradise, and Sunproof Crimson being conspicuous.

MESSRS. JOHN KING & SONS, Coggeshall, displayed a very large assortment of Sweet Peas in excellent condition.

MR. ROBERT SYDENHAM & CO., Birmingham, showed a particularly fine collection of Sweet Peas, Sunproof Crimson, Cerise Paradise, and Evelyn Hemus being the more notable varieties.

MESSRS. G. STARK & SON, Norfolk, and W. J. UNWIN, Cambridgeshire, also had extensive displays of these flowers.

MESSRS. WHITELEGG & PAGE, Chislehurst, showed a small collection of high-class varieties.

Other exhibitors of Sweet Peas included Sir RANDOLPH BAKER, Bart., Blandford; Mr. C. W. BREADMORE, Winchester; Messrs. GODFREY & SONS, Exmouth; E. J. JOHNSTONE, Esq., Groombridge (gr. Mr. A. T. Paskett); and Messrs. KELWAY & SONS, Langport.



FIG. 8.—DELPHINIUM "LAMARTINII."

(Award of Merit at Holland House Show.)

MESSRS. GODFREY & SONS, Exmouth, showed a new Amaranthus named tricolor, show and Regal Pelargoniums, Solanum Wendlandii, and a selection of Sweet Peas.

MESSRS. GEO. JACKMAN & SON, Woking, exhibited a group of Clematis of large-flowered varieties of the Jackmanii type, and a few species. Amongst the more showy varieties were La France, lavender-blue; Jean d'Arc, white; Ville de Lyon, a rich shade of claret-red; Lady C. Neville, lavender; C. montana rubens and C. flammula rosea purpurea.

MESSRS. H. J. JONES, LTD., Lewisham, displayed Zonal Pelargoniums and their new white Sweet Pea named Beatrice Stevens.

MR. W. H. PAGE, Tanglebury Nursery, Hampton, displayed an imposing group of Carnations interspersed with bold bunches of Lilium longifolium and having a row of Rambler Roses at the back. The Roses were magnificently flowered,

HARDY PLANTS.

Hardy plants were, as usual, exhibited in great numbers, and two displays in this section, namely, those of Messrs. R. WALLACE & Co., Colchester, and Mr. AMOS PERRY, Enfield, were of unusual interest. Messrs. WALLACE'S group comprised an Iris garden, with a stream of water, and, on one side, a broad terrace of flagstones, backed by a wall garden decorated with choice, hardy flowers. The most-pleasing portion of the display was the Iris garden. It consisted of a gorgeous display of *I. Kämpferi*, with a stream of water cleverly disposed through the centre, and spanned in parts with weather-worn stones. At the back, were banks of *Spiraea palmata*, Bamboos, Ferns, and Palms. In the water floated gorgeous-coloured Nymphæas, the banks being turfed in a natural manner. Where the water terminated overhung a tall plant of *Wistaria multijuga alba*, in a comparatively small pan, as imported from Japan. Here commenced a broad, flagged terrace, and, at the back of this, about the middle, was a stone seat, with sweet-scented plants all around it. Overhanging the seat were tall spikes of *Eremuri*, principally Shelford hybrids, Lilliums, and other tall-growing subjects. So cunningly had the whole been conceived and executed that it gave the impression of a portion transported bodily from some old-time garden, and even the stones themselves had the appearance of age.

Mr. AMOS PERRY, Hardy Plant Farm, Enfield, filled a large tent entirely with Delphiniums, staging from 25,000 to 30,000 spikes of these handsome flowers. The arrangement was that of irregular grouping throughout, and, although under canvas, was attended with very considerable success. Among the more conspicuous varieties we noted Lizzie, Sir George Newnes, King of Delphiniums, Duke of Connaught, Amos Perry, Lamartine, Blue Fendre, La France and Mme. Violet Geslin.

Messrs. WM. CUTBUSH & SON, Highgate, displayed an extensive exhibit of hardy things, prominence being given to a group of hybrid *Eremuri*, the result of crosses between *E. Shelford*, *E. Bungei* and others. *Iris lævigata*, *I. aurea*, English Irises in variety with Lilies of many kinds, *Achillea Cerise Queen* (the showiest of the Millfoil group), *Senecio macrophylla*, *Potentillas* and *Campanulas* were shown in large numbers, a few hardy *Sarracenias* appearing at the margin of the water. *Richardia Solfaterre*, having yellow flowers with a dark-coloured base, was also very fine.

Messrs. G. & A. CLARK, LTD., Dover, showed a fine group of hardy flowering plants, of which *Delphinium Alake*, *D. King of Delphiniums*, and the new *Geum Mrs. J. Bradshaw* were prominent features. Very striking, too, was a big, central group of the scarlet *Gilea coronopifolia*, which afforded a blaze of colour. Many other choice Alpine plants and shrubs were noticed in the exhibit.

Messrs. BAER & SONS, Covent Garden, London, arranged a large bank of early *Gladioli*, *Delphiniums*, English Irises, *Iris aurea*, Lilies, *Antirrhinums*, and other seasonable plants, making a showy group.

Messrs. G. BUNYARD & Co., Maidstone, displayed a particularly fine array of hardy flowers, of which *Delphiniums* constituted a leading feature. Of these the most conspicuous was the new variety *Rev. E. Lascelles*, a flower of intense blue colouring with a pure white centre. *Shylock* and *Media* are others possessing desirable characteristics, the first-named variety, with its dark stems, affording a distinct effect. *Alake* and *Bassanio* were also prominent in a large collection of these flowers. *Astilbes*, *Campanula lactiflora*, *Iris Monspur*, and other seasonable things were also remarked.

Mr. CLARENCE ELLIOTT, Stevenage, Hertfordshire, had a particularly interesting and showy rockery, arranged with choice Alpines, including *Campanula pulla*, *C. Stansfeldii*, *C. pumila pallida* (very fine), *C. pulloides*, *Epilobium obcordatum* (a mass of rosy blossoms 4 inches high), *Oxalis enneaphylla*, *Dianthus Atkinsonii*, and several *Androsaces*.

Mr. A. UPTON, the Guildford Hardy Plant Nursery, staged many good and interesting plants, of which the *Veronicas* were a feature. *Thalictrum Delavayi*, *Scabiosa ochroleuca*, *Crinum*, and other things were also noted.

Mr. R. C. NOTCUTT, Woodbridge, Suffolk, had a large exhibit of herbaceous plants, Irises, and

flowering shrubs, the first-named embracing a large variety of seasonable flowers.

Mr. B. LADHAMS, Shirley, Southampton, had a group of *Campanula persicifolia alba coronata*, together with perpetual-flowering Pinks, *Scabiosa caucasica*, and other good species.

Messrs. R. H. BATH & Co., LTD., Wisbech, showed *Delphiniums* and other herbaceous plants in variety, the first-named in a choice assortment.

Mr. G. REUTHE, Keston, Kent, had one of his notable displays of Alpines, choice shrubs, and herbaceous plants, the whole constituting an exhibit of much interest. Of *Campanulas* alone there was quite a number. *C. Raddeana*, *C. cenisia*, *C. Stansfeldii*, *C. barbata alba*, *C. garzanica* in several varieties; *C. pulloides*, *C. G. F. Wilson*, and others being remarked. *Rhododendrons hirsutum* and *saphnoides*, *Mitraria coccinea*, *Philesia buxifolia*, *Abelia floribunda*, with

being a towering example of *Lilium giganteum*, the pendent white, crimson-stained trumpet flowers attracting much notice. Rarely indeed have we seen this plant exhibited better. *Orchis foliosa* was also good.

Messrs. W. & J. BROWN, Peterborough, displayed *Gaillardias* and *Scabiosa caucasica* among many other garden plants.

Mr. H. HEMSLEY, Crawley, Sussex, set up a rockery exhibit of large size, planting it freely with Alpines, dwarf shrubs, and hardy Ferns.

Messrs. G. MALLETT & Co., Cheddar, arranged a bank of Alpine and herbaceous plants. *Lilium candidum* was very good in the centre of the group; while *Campanula Burghaltii*, *C. Hendersonii*, *C. pusilla*, *Dianthus graniticus* (a mass of rosy blossoms and apparently nearly allied to *D. deltoides*) were other choice plants noticed in this group.

Messrs. PULHAM & SONS, Elsenham, Essex,



FIG. 9.—ROSE "JULIET," AS SHOWN AT HOLLAND HOUSE.

(Awarded a First-Class Certificate.)

Irises, hardy Heaths, and *Wulfenia Amherstii* made up a most interesting collection.

Messrs. WHITELEGG & PAGE, Chislehurst, had an imposing group of *Campanulas* and Larkspurs.

Messrs. J. GODFREY & Co., Exmouth, showed a fine strain of *Canterbury Bells* in many shades of colour.

Messrs. GEO. JACKMAN & SON, Woking, had an extensive group of choice Lilies, *Alströmarias*, *Scabiosa caucasica*, white and coloured *Delphiniums*, *Iris Kämpferi*, and other plants.

Messrs. BEES, LTD., Liverpool, showed some of their new *Primulas*, introduced by the firm from China, of which the curious *P. littoniana* and the golden orange-coloured *P. Bulleyana* constituted the most noteworthy.

Messrs. GEO. PAUL & SON, Cheshunt, had a large group of seasonable herbaceous subjects chiefly shown as cut flowers, an exception

arranged a small rock-garden exhibit planted with choice Alpines.

Misses HOPKINS, Shepperton-on-Thames, arranged an extensive rockery or Alpine bank, on which was planted a choice assortment of *Saxifragas*, *Sedums*, *Dianthi*, *Campanulas*, *Edelweiss*, and many more.

Messrs. KELWAY & SON, Langport, showed an extensive display of *Delphiniums*. *Lord Lytton*, very dark in colour, *The Shah*, with double flowers of an intense Royal purple colour, and *Sir John Forrest*, dark blue with a white centre, were the more conspicuous varieties.

Messrs. WM. ARTINDALE & SON, Sheffield, staged an extensive collection of *Violas* and *Pansies*, having a long table filled with an assortment of the best varieties.

Mr. M. PRICHARD, Christchurch, Hants., arranged a water-garden in conjunction with a

general display of herbaceous plants. A pool was planted with *Nymphæas*, whilst around were planted *Astilbes*, *Spiræas*, *Gunneras*, and *Iris lævigata* in variety. *Alströmérias*, many species and varieties of *Lilium*, *Isatis glauca* (a cloud of golden blossoms), a lovely patch of *Dianthus Atkinsonii*, with *Eremuri*, and much more afforded bright banks of colour.

MESSRS. ALFRED WATERS & CO., Bath, had a lovely display of *Delphinium* Rev. E. Lascelles, with flowers of the deepest blue and white.

Mr. HOWARD CRANE, Highgate, N., had a most charming display of *Violettas*. The varieties *Chloris*, *Diana*, *Claribel*, *Sweetness*, *Queenie*, all raised by Mr. CRANE, were among the more distinct sorts.

AWARDS.

FIRST-CLASS CERTIFICATE.

Rose Juliet (see fig. 9).—This extraordinary variety was given an Award of Merit on July 20, 1909, when shown by Messrs. W. PAUL & SON. The Committee now recommended that the award should be raised to a First-class Certificate on account of the distinctness and attractiveness the flowers exhibit. The petals are bright red on the inner surface and buff on the reverse, the effect being unique. The fine colour, however, is not the only good quality this *Rose* possesses, for its fragrance is sufficient to distinguish it from most of the newer varieties. (Shown by Messrs. W. PAUL & SON.)

AWARDS OF MERIT.

Begonia Mrs. W. L. Ainslie.—This tuberous-rooted *Begonia* is remarkable for its exceedingly rich, buttercup-yellow-coloured flowers, which in size are almost equal to the largest in modern collections. (Shown by Messrs. BLACKMORE & LANGDON.)

Delphinium Belladonna semiplena.—In the section of dwarf-growing *Delphiniums* suitable for bedding purposes, this variety is one of the most pleasing in tint. The flowers are nearly double, and in colour pale, azure blue, with mauve in the centre. Shown by Mr. AMOS PERRY.)

Delphinium Lamartini (see fig. 8).—This dwarf-growing variety has deep-purple flowers, and its effect when massed is described as excellent. (Shown by Mr. A. PERRY.)

Gladiolus Edward VII.—This variety belongs to the early-flowering section, being the result of a cross between *Crimson Queen* and *Ardeus*. The flowers are very large and spreading, and the colour is brilliant red with a shade of orange in it, the three lower segments being marked with purple and silver. (Shown by Mr. FRANK LILLEY, Guernsey.)

Rose Mrs. Foley Hobbs.—This new H.T. variety from Messrs. ALEX. DICKSON & SONS, was much admired. The flowers are large, and in their form exhibit much refinement. They are white, with just a suspicion of sulphur shade in all the petals, also of flesh tint in the centre, as the young petals open. The older petals are very large and shell-like.

Rose Mary Countess of Ilchester.—A first-class variety of the H.T. type in a colour section that needs strengthening with new sorts. The flowers are large, possess fine, prominent centres, and the colour is deep rose with slight violet shade. It is one of the very best *Roses* distributed last season by Messrs. ALEX. DICKSON & SON.

Orchid Committee.

Present: Harry J. Veitch, Esq. (in the Chair); and Messrs. Jas. O'Brien (hon. sec.), J. Gurney Fowler, E. Ashworth, H. Ballantine, F. Sander, H. J. Chapman, J. Charlesworth, Gurney Wilson, H. Little, H. G. Alexander, de B. Crawshaw, W. P. Bound, A. Dye, F. M. Ogilvie, W. Thompson, W. Cobb, W. H. Hatcher, R. G. Thwaites, W. Waters Butler, W. Bolton, H. A. Tracy, C. J. Lucas, and W. H. White.

At the entrance of the large tent on one side, Messrs. SANDER & SONS, St. Albans, staged a magnificent group, which contained a large proportion of exceptionally fine novelties, one of which, *Miltonia vexillaria Lambeauiana*, secured a First-class Certificate, and three other plants gained Awards of Merit. The elevated centre of the group was of white *Phalænopsis amabilis Rimestadiana*, with the rosy-tinted spikes of *Dendrobium Phalænopsis* mingling with them; the front being of a general selection of good species, including *Angu-*

loa Ruckeri and other *Anguloas*; some interesting *Bulbophyllums*, of which *B. virescens* was the largest; and on each side exceptionally fine varieties of *Cattleya Mendelii*, the floriferous and richly-coloured *C. Warscewiczii Sanderiana*, several *Odontiodas*, including the new *O. St. Fuscien*. One of the most beautiful in the group, was *Vanda cœrulea* var. *Princess Juliana*, a model flower of perfect shape and fine substance, the segments veined with violet-blue, the lip wholly violet. Near it, was a good example of the natural hybrid *V. Mooreana* and various other *Vandas* and *Aerides* were included. At the ends, were

were distinct in their classes. Other fine plants were, *Miltonia St. André superba*, *Sophro-Cattleya Danæ*, *Phalænopsis Sanderiana*, *Cypripedium A. Dimmock*, &c. Of pretty little species, *Cirrhopetalum Roxburghii*, *Epidendrum Medusæ* and other *Epidendrums*; the rare little *Orchis monophylla*, with fleshy leaf blotched with purple, and a large number of curious plants.

H. S. GOODSON, Esq., Fairlawn, Putney, arranged a small group made up of hybrid *Odontoglossums*, *O. Lambeauianum St. David* being a very fine flower; two very handsome *Cattleya F. W. Wigan*; *C. Gaskelliana Mrs.*



FIG. 10.—GLADIOLUS "KING EDWARD VII.": COLOUR, BRILLIANT RED WITH SILVERY MARKINGS ON LOWER SEGMENTS.

(Award of Merit at Holland House Show.)

a fine selection of *Lælio-Cattleyas*, the forms of *L.-C. blechleyensis* being specially good and varied in tint from rose and purple to bronzy-orange with claret-coloured lip. Hybrid *Odontoglossums* were well displayed. Of new plants, *Lælio-Cattleya lucida* (*L.-C. Phoebe* × *C. Warscewiczii*); *Miltonia vexillaria King George V.*, with a large, bluish-tinted flower, having purple markings at the base of the lip; *Cattleya Mossiæ Wageneri Purity*, a good pure-white flower; and *C. Dupreana (Warneri* × *Warscewiczii*)

Goodson, white, with a small purple spot on the lip; several *Odontiodas*, &c.

Mr. E. V. Low, Vale Bridge, Haywards Heath, staged a small group having in the centre a number of well-flowered specimens of *Cypripedium callosum Sanderæ*. With them were *C. H. Ballantine*, *C. Gaskelliana alba*, *C. Mossiæ alba*, some good *C. Mendelii*, *C. Eldorado alba*, *Cypripedium Godefroyæ leucochilum*, &c.

MESSRS. MANSELL & HATCHER, Rawdon, Leeds, came next with a beautifully-arranged group, in

which the Cattleyas of the season were well represented. The centre was of fine forms of *C. Warscewiczii*, mingled with showy *Odontoglossums*, fine examples of *Miltonia vexillaria*, including the distinct variety *chelseiensis*, and a fine, white-lipped variety, *M. Bleuana*, and some bright-scarlet *Odontiodas*. On each side, were a number of plants of the reddish-scarlet *Renanthera imschootiana*, with *Odontoglossums* and fine *Cattleyas*, the ends being of *Lælio-Cattleyas*, hybrid *Cattleyas*, *Odontoglossums*, &c. Prominent in the group were two examples of the new *Dendrobium Sanderae*, with sprays of fine, white flowers, having some purple lines in front of the emerald-green base of the lip. A batch of the handsome and fragrant *Oncidium Lanceanum*; a fine form of *O. macranthum*, with some purplish markings on the petals; the dark-coloured *Maxillaria nigrescens*; two clear-white *Cattleya Mossiae Wageri*, with several scarlet *Odontioda Bradshawii*; some showy hybrid *Cattleyas*, and *Lælio-Cattleyas*, *Cypripedium Parishii*, and other *Cypripediums*; *Brasso-Cattleya Digbyano-Warscewiczii*, *Promenæa xanthina*, *Angraecum Scottianum*, *Bulbophyllum barbigerrum*, and a number of other interesting species were noted in this group.

Sir JEREMIAH COLEMAN, Bart., V.M.H., Gatton Park, Reigate (gr. Mr. Collier), staged a very fine group, rich in rare species and good varieties. The centre was of *Cattleyas* and *Lælio-Cattleyas*, the *Cattleya Warscewiczii* King Edward VII. being a superb form, with the lip almost entirely of a deep, ruby-claret colour, and having only two small white spots in the tube. Overhead were the long spikes of *Oncidium macranthum*, with a good specimen of *O. superbiens*, and some other *Oncidium*s. At the sides, was arranged a selection of *Dendrobium*s, among which was the singular hybrid *D. Arthur Ashworth* (*Brymerianum* × *Dalhousianum*), with a good spike of pale yellow flowers, with some purple markings on the fringed lip. *Miltonia vexillaria* Queen Alexandra had large, white flowers; *Zygopetalum Roeblingianum* was finely shown; *Cattleya Rex* and other *Cattleyas*, and *Lælio-Cattleyas* were well displayed; and among rare plants noted were *Eriopsis rutidobulbon*, with a fine spike of golden-yellow flowers, margined with purple; *Cirrhopetalum pulchrum*; *Bulbophyllum lemniscatoides*, with a singular tassell-like head of bloom; *B. biflorum*; *B. grandiflorum*; *B. barbigerrum*; *Gongora quinquenervis*; some very pretty *Masdevallias*, including *M. calura*, *M. melanoxantha*, and some of the smaller species, with insect-like flowers; *Zygopetalum rostratum*; *Eria pannea*; *Cœlogyne Schilleriana*; and a large number of rare species. Among the *Odontoglossums*, *O. Lady Roxburgh* (*cirrhosum* × *periculatum*) was an elegant flower, clear white, and effectively spotted.

On the other side, Messrs. CHARLESWORTH & Co., Haywards Heath, staged a very fine group, the centre of which was of fine plants of *Phalenopsis Rimestadiana*, with an undersetting of *Epidendrum vitellinum*. The plant of the day was *Odontoglossum Smithii*, a noble hybrid, often alluded to in these pages, and which, so far, continues unique. All the plants in cultivation, including this specimen, pass into the collection of J. Gurney Fowler, Esq., the Treasurer of the Royal Horticultural Society. The sides of the group were made up of good *Phalenopsis*, and *Cattleya Mossiae*, including some very fine white varieties. In the body of the group, *Odontioda Charlesworthii* *superba*, with its bright red flowers; a very fine series of yet unproved *Odontiodas*; some good varieties of *Dendrobium Phalenopsis*; some new *Lælio-Cattleyas*, including the new *L.-C. Ceres* (*L. Phoebe* × *C. Mossiae Reineckiana*), a charming flower, and one of the few of these yellowish *Lælio-Cattleyas* which are of good shape. The hybrid *Odontoglossums*, *Lælio-Cattleyas*, and *Cattleyas* in Messrs. CHARLESWORTH'S group were excellent, and special plants were *Dendrobium Sanderae*, *Odontoglossum ardentissimum* *xanthotes*, *Odontioda Goodsoniae*, and *Ludemannia biloba*, a very remarkable and rare species, with long racemes of golden-yellow flowers tinged with purple.

At the other end, Messrs. STUART LOW & Co., Bush Hill Park, Enfield, staged a very interesting and effective group, in which *Dendrobium nobile virginale*, with its pure-white flowers, was a telling feature. *Lælio-Cattleyas*, hybrid *Cattleyas* and species were well shown. In one

little batch, the blue *Dendrobium Victoria Regina*, *D. rhodostoma*, *D. glomeratum*, *Angraecum Scottianum*, *Bulbophyllum Claptonense*, and other *Bulbophyllum*s were noted; also *Pleurothallis stenophylla*, *Epidendrum Brassavolæ*, *E. calochilum*, and other *Epidendrum*s, *Maxillaria pubigera*, a pretty selection of *Masdevallias*, &c., were noted.

FERGUS MENTEITH OGILVIE, Esq., The Shrubbery, Oxford (gr. Mr. Balmforth), showed the delicately-tinted *Cattleya Warscewiczii* Mrs. E. Ashworth, a charming bluish-white variety, which ought to get the higher award of F.C.C., beyond the A.M. already awarded.

J. GURNEY FOWLER, Esq., Glebelands, South Woodford (gr. Mr. Davis), showed *Odontoglossum Pescatorei alba* Fowler's variety, a very charming flower, with pure-white flowers, the only colour being the pale-yellow crest to the lip. Also the rare, pretty, and fragrant *Catasetum Russellianum*.

Messrs. JAS. VEITCH & SONS showed a group of their beautiful *Disa* × *Luna*, *Lælio-Cattleyas*, &c.

AWARDS.

FIRST-CLASS CERTIFICATES.

Miltonia vexillaria Lambeauiana, from Messrs. SANDER & SONS, St. Albans.—A most beautiful, pure-white variety of the large-flowered form; the lip is lemon-yellow with a few darker lines on the disc.

Cattleya Mendelii "Stuart Low," from Messrs. STUART LOW & Co., Bush Hill Park.—The finest white *C. Mendelii* yet shown. The flowers are large and of fine form; snow-white with chrome disc to the lip.

AWARDS OF MERIT.

Cattleya Dietrichiana (*superba* × *Hardyana*), from Messrs. SANDER & Co.—A very fine hybrid with large, rosy-lilac flowers of fine form and substance, the broad front of the lip glowing ruby-purple.

Cypripedium Curtisii Sander's variety, from Messrs. SANDER & SONS, St. Albans.—A grand form, and said to be merely an example of a small batch recently imported by Messrs. SANDER & SONS. The difference may be said to be that this variety is much larger and finer in colour and in form than any yet imported.

Cattleya Mendelii King George V., from Messrs. SANDER & SONS.—An extraordinary variation, in which the petals and lip are most beautifully crimped. The sepals and petals are bluish-white, and the front of the finely-fimbriated lip is magenta.

Fruit and Vegetable Committee.

Present: G. Bunyard, Esq. (in the Chair); also Messrs. J. Cheal, O. Thomas, G. Wythes, P. G. M. Veitch, J. W. Ward, H. Parr, C. O. Walter, G. Woodward, J. Jaques, A. R. Allan, J. Harrison, F. Perkins, A. Dean, J. Basham, F. Fred. Tresder, W. Pope, H. S. Rivers, G. Reynolds, G. Kelf, and T. Coomber.

The only exhibits for the inspection of the Committee included a Tomato from Mr. PAUL, Botley, Hants (unripe), and Strawberries Hibberd's Superlative and George V., from Mr. HIBBERD, Botley Grange, Hants; a large collection of Radishes, Peas, and a Lettuce, grown at Wisley.

FRUIT TREES IN POTS.

Of these there were three collections, one from a private garden, that of S. HEILBUT, Esq., Holyport, Maidenhead (gr. Mr. G. Camp), who had, specially prominent, 12 noble and tall Cherries in 14-inch pots, laden with superb fruit. These included Black Bigarreau, Bigarreau Noir de Schmidt, Emperor Francis, Bigarreau Montreuse de Mezel, also Peaches, Nectarines, and Figs.

In the same tent was a very large collection from Messrs. RIVERS & SON, Sawbridgeworth, including some 70 trees of various sizes. Of Peaches, there were Thomas Rivers, Sea Eagle, Peregrine, Nectarine, Albatross, and Crimson Galande; of Nectarines, Early Rivers and Lord Napier; Cherries, Black Tartarian, Governor Wood, May Duke, Black Hawk, Black Heart, and Frogmore Bigarreau; of Grapes, there were Foster's Seedling and Gradishna; of Plums, Curley, Czar, and Tall Orange; of Apples, Lady Sudeley, Peasgood's Nonesuch, Jas. Grieve, and Worcester Pearmain; Pears, Conference and Pitmaston Duchess, and Oranges, Maltese Oval and the large Egg. On this last-named variety

good-sized, green fruits were hanging with the ripe fruits. There were, fronting the trees, in boxes, fine fruits of Peregrine Peach, Blue Rock and Yellow Egg Plums, Reine Hortense, Emperor Francis, Early Rivers, and Bigarreau Noir de Schmidt Cherries.

From the KING'S ACRE NURSERY Co., Hereford, came a large collection, including many single cordon and standard Gooseberries, these being all well fruited. The collection was faced by a large number of Strawberry plants in pots, all heavily fruited. These included Sir Joseph Paxton, Reliance, President, and Leader. The back trees were Peaches, Plums, and Cherries, but the naming was too indistinct to be seen from the front. One flat-trained tree of Peach Duke of York was well fruited. There were also a few vines and Figs.

GATHERED FRUIT.

A notable feature of the show was the picked fruit, a section not usually well represented. A prominent place was occupied by the superb collection from Welbeck Abbey, sent by the Duke of PORTLAND (gr. Mr. J. Gibson). This included about 50 dishes, the whole being elegantly arranged and prettily dressed with small plants and foliage. The Grapes were Alnwick Seedling (very fine), Black Hamburg, Madresfield Court, Muscat of Alexandria, and Foster's Seedling, three bunches of each; Peaches were Grosse Mignonne, Dymond, Crimson Galande, and Bellegarde, in dozens; also Nectarine Cardinal, Lord Napier, Early Rivers, and Pine Apple; Plums, Jefferson's, Kirke's and Transparent Gage; Cherries, Bigarreau de Mezel and Emperor Francis; Figs, White Marseilles, Negro Largo, and Brown Turkey; Melons, Sutton's Seedling and Scarlet, Emerald Gem, Gunton's Scarlet, Royal Jubilee, and others; Apples, Alington Pippin and Jas. Grieve; and Strawberries, British Queen and Royal Sovereign.

Lord LLANGATTOCK, The Hendre, Monmouth (gr. Mr. T. Coomber), had 20 very clean and well-finished Queen Pines, and 14 boxes of Strawberries, the fruit in each case being exceptionally fine and richly coloured. Scarlets were Fillbasket, The Cropper, Trafalgar, Royal Sovereign, and The Alake. Dark-coloured Strawberries were The Bedford, Reward, Progress, Bedford Champion, Givon's Late Prolific, Gunton Park, President Loubet and Waterloo, with Louis Gauthier white.

LEOPOLD DE ROTHSCHILD, Esq., Gunnersbury House, Acton (gr. Mr. Jas. Hudson), staged a collection inclusive of fine Crimson Galande Peaches; Stanwick Elruge Nectarine; Kirke's, Jefferson's, and Transparent Gage Plums; and Bigarreau Napoleon, Governor Wood, Emperor Francis (white), Late Duke (red), and Bigarreau de Schrecken, Tradescant's Late Heart, Black Circassian, and Early Rivers (black) Cherries.

From Hatfield House, Herts., the Marquis of SALISBURY (gr. Mr. H. Prime) sent a very nice collection of 40 dishes, including Black Hamburg Grapes; Royal George, Bellegarde, and Crimson Galande Peaches; Lord Napier Nectarines; Brown Turkey Figs; Monarch, British Queen, Mentmore, Givon's Late Prolific, and Royal Sovereign Strawberries; Cherries, Governor Wood and Early Rivers; and other fruits, all excellent.

The Misses LE LACHEUR and SHERRES, Henfield, Sussex, had 20 superbly-finished and coloured fruits of the Swanley College Melon, very round, golden, and handsomely netted, all first-class in excellence.

E. S. HANBURY, Esq., Ware, Herts. (gr. Mr. F. W. Church), staged, rather too crowded, a collection, including Foster's Seedling and Black Hamburg Grapes; fine Crimson Galande, and Dr. Hogg Peaches; Dryden Nectarines; and other fruits, which badly needed more space.

Messrs. LAXTON BROTHERS, Bedford, had 50 feet run of tabling for staging 41 baskets of Strawberries. New varieties were Sir Joseph Paxton, Progress, Laxton's Latest, The Laxton, The Bedford, Utility, Bedford Champion, Reval, Leader, Gunton Park, Waterloo, and Reward. The fruits were well coloured, of fair size, and presented most of the best known varieties.

Mr. S. MORTIMER, Swiss Nursery, Farnham, had a big collection of some 80 magnificent fruits of various Melons, including Sutton's Superlative, Ringleader, Blenheim Orange, Royal Sovereign, Royal Favourite, and Scarlet Gem; also of nearly ripe seedling fruit.

Cucumbers Aviator (new), King George, Telegraph, Bounteous, and a fine new seedling, very long and handsome.

Mr. A. POUPART, Jun., Twickenham, staged a collection of over 100 bottles of preserved whole fruits, all in fine condition. These included Apricots, Plums in variety, Raspberries, Cherries, Strawberries, Currants, and Gooseberries.

VEGETABLES.

The Hon. VICARY GIBBS, Aldenham House, Herts. (gr. Mr. E. Beckett), had one of those splendid collections of vegetables for which those gardens are famous. The collection included 80 dishes, staged with an erect back, on which were mounds of Cauliflowers Early London, Walcheren and Kaiser; Peas, Talisman, New Kaiser, Stourbridge Marrow and Gradus; French Beans Canadian Wonder and Ne Plus Ultra; Long Pod Giant Bean; Tomatos, Sunrise, Greengage, Golden Queen, New Jewel, and Sensation; Carrots Intermediate, Early Nantes, Prizewinner and French Forcing; Cucumbers Universal, Bountiful, Royal Favourite, and Telegraph; Celery Prize Pink and Grove White; Cabbages First of All; Potatos Express, Duke of York, King Edward and Queen of the Veldt; Lettuces, Beets, Turnips, Marrow and other vegetables.

C. F. RAPHAËL, Esq., Shenley, Herts. (gr. Mr. A. Grubb), had a meritorious collection of vegetables, which included 50 dishes, most pleasingly staged. Cauliflowers Magnum Bonum and Walcheren; Dwarf Beans Canadian Wonder and Ne Plus Ultra; Peas Duke of Albany, Alderman and Quite Content; Long Pod Beans Leviathan and Green Giant; Potatos May Queen, Windsor Castle, Duchess of Cornwall and Express; Tomatos, Marrows, Celery, Lettuces, Turnips, Cabbages and other kinds.

Messrs. SUTTON & SONS, Reading, staged a very fine representative collection of edible Peas, in all, 85 dishes, of which 56 were distinct varieties. These pods were arranged in baskets, and amongst them were Superlative, Duke of Albany, Early Giant, Bountiful, Discovery, Telephone, Prizewinner, Duchess of York, Matchless Marrow, Exhibition Marrow, Peerless, Centenary and Best of All. Many were quite early varieties, the pods being almost ripe. Some Sugar Peas were included.

OUTDOOR EXHIBITS.

The exhibits of hardy plants were arranged, as in former years, parallel with the two large marquees containing the chief collections of Orchids, warm-house, and greenhouse plants, the backs of the groups being towards the marquees.

Messrs. J. VEITCH & SONS, LTD., King's Road, Chelsea, exhibited a large group consisting of Hydrangeas, including *H. hortensis*, with blue flowers, *H. h. flore alba*, *H. Lindleyana* (a Chinese species, having white flowers), *H. arborescens alba grandiflora* (the plants carrying many trusses of pure white flowers), *H. japonica tricolor*, a few plants of *Veronica angustifolia*, several varieties of Tree Ivies, conspicuous being *Hedera arborea chrysophylla*, *H. a. Golden Cloud*, also *H. Helix canariensis latifolia maculata*; a quantity of plants of *Clematis*, including several of *C. velutina purpurea*, *C. Star of India*, *C. Perle d'Azur* (having flowers of cerulean blue), *C. Mme. Grange* (purple), *C. modesta*; several *Arundinarias*, and a plant of *Actinidia chinensis*—a recent introduction.

Messrs. D. RUSSELL & SON, Essex Nursery, Brentwood, showed a group having a pool of water in the centre containing Water Lilies, and bordered with flowering land plants, such as *Iris Kämpferi*, *Agapanthus*, *Monarda*, *Bupthalmia speciosa*, *Spiræas* in variety, *Campanula media*, *Veronicas*, *Phormium tenax*, *Arundo*, &c. Surrounding the pool was a group of Tree Ivies, ranging from 2 feet to 6 feet in height, of variegated kinds, these being backed by taller plants having variously-coloured leaves. A few Rambler Roses, with Hydrangeas, gave a desirable touch of colouring to the whole. Two rustic arches seemed to afford entrance and egress to the arrangement. In the pool there were floating *Nymphaeas* of the varieties *Gladstoniana*, *gloriosa*, *colossea*, and *Marliacea albida*.

Messrs. J. CHEAL & SONS, Lowfield Nursery, Crawley, erected a three-sided pergola, and decorated it with *Vitis Henryi*, yellow-leaved Hop, *Clematis*, *Actinidia*, variegated Ivies, Doro-

thy Perkins Roses, &c. In the enclosure formed by the pergola were four beds of Pansies, with a grass plot, and round about the latter was a border filled with *Spiræa Anthony Waterer*, *Hydrangeas*, Japanese *Acers*, Rambler Roses, and various small shrubs.

Mr. L. R. RUSSELL, Richmond, had an exhibit of *Bambusas* growing in pots and an oblong pool with Water Lilies in bloom. Other plants than the foregoing included Japanese Maples, and a miscellaneous collection of trees and shrubs.

Messrs. J. CARTER & CO., Holborn, exhibited a rockery that was planted in a pleasing manner, but not precisely with Alpine species. It was an effective piece of work. A long, narrow piece of water, spanned with a Japanese bridge at about the middle of it, and a stone lantern at one end, gave the desired character to the whole. *Iris Kämpferi* and Water Lilies were employed freely. Round about the margin of the lake were pigmy trees, growing in what appeared to be pieces of lava, but which might have been clinkers from the garden furnace. Colour was afforded by some well-flowered specimens of *Hydrangea* and *Lilium japonicum*.

Messrs. JOHN WATERER & SONS, LTD., Bagshot, made a display with tall plants in pots of *Vitis Henryi*, *Ilex aquifolium*, Perry's Weeping Holly (a silver, variegated variety), *Taxus fasti-*

hibit contained many other rare and interesting plants.

Messrs. CARLTON WHITE, Florists, 55, New Bond Street, had a variety of objects of the topiary art.

Mr. AMOS PERRY, The Hardy Plant Farm, Enfield, showed an assortment of *Nymphaeas* of the more choice varieties, also *Richardias* and Japanese *Iris*es. Subjects that attracted our notice were *Nymphaea Paul Heriot*, a white-petalled flower, having a deep-carmine colour at the centre—very striking; *N. Ellisiana*; *Delphinium belladonna grandiflora*, with flowers of a clear, light blue; *D. Mrs. Thompson*, of a deep blue tint; potsful of *Hemerocallis obovata*; and *Richardias* of yellow and creamy-white colours.

Messrs. W. WOOD & SON, LTD., Wood Green, N., set up a pergola, covering it partially with such Rambler Roses as Dorothy Perkins and Lady Gay.

Messrs. W. FROMOW & SONS, Sutton Court Road, Chiswick, showed Japanese Maples in variety, Coniferous plants, *Bambusas*, *Hydrangeas*, *Aralia pentaphylla variegata* (an effective plant), and *Andromeda cassinifolia*, covered with its white, bell-shaped flowers.

Mr. CLARENCE ELLIOTT, Six Hills Nursery, Stevenage, arranged a rock-garden exhibit, on

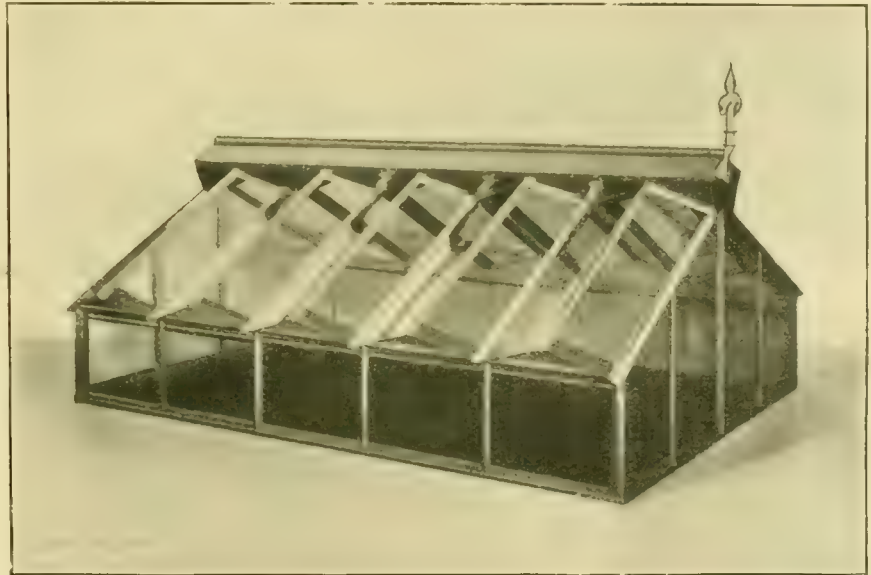


FIG. 11.—MR. BEAMISH'S EXHIBIT OF PRISMATIC ROOFING AT HOLLAND HOUSE SHOW.

giata *Standishii* (a yellow-leaved Yew), and a few other rare plants.

LEOPOLD DE ROTHSCHILD, Esq., Gunnersbury House, Acton, had an extensive exhibit of "terrace" plants. We noted big bushes, 7 feet to 8 feet high and 4 feet in their greater diameter, of Myrtles struck from cuttings 20 years ago, *Aloysia citridora*, rooted about as long ago, and having stems 3 inches in diameter, and of a height of about 6 feet. Sweet-scented Cape species of *Pelargoniums* were of wonderful dimensions, many of them being 10 feet to 12 feet in width, trained on flat trellises. The varieties were *Quercifolium*, *Pretty Polly*, *Richard Dean*, *capitatum*, *Pheasant's Foot*, and *Attar of Roses*.

Messrs. PAUL & SON, Cheshunt, showed *Catalpa speciosa pulverulenta*, *Prunus Pissardii nigra* (having a leaf-colour darker than the type), *Vitis Thompsonii* (having red foliage), *V. Henryi*, *Populus lasiocarpa* (the leaves, when fully grown, being 8 inches in length and 4 inches in breadth; the youngest leaves are of a reddish-green tint, as are the veins at all stages). Other plants noted in the group were *Picea pungens glauca Kosteri*, a very distinct variety of this fine Conifer; several forms of *Cupressus Lawsoniana*; a yellow-leaved variety of *Retinospora filifera*, and *R. tetragona*. The young growths of *Cupressus Westermanni* have a yellow tint. *Philadelphus Yokohama* is very floriferous; the individual blooms are of the size of a florin; *P. maculata purpurea*, with a purple stain at the base of the white petals; and *Picea excelsa magnifica*, with yellowish-green needles. The ex-

which he displayed in a natural manner a number of interesting Alpines. Many were species of *Campanulas* seldom seen in gardens, viz., *C. Stansfieldii*, *C. pusilla*, *C. pulloides*, *C. pulla*, and *C. pusilla pallida*. Other plants shown by Mr. ELLIOTT included the bright-scarlet-flowered *Dianthus Atkinsonii*, *Erigeron caucasicum*, *Wahlenbergia saxicola*, *Epilobium obcordatum*, *Prunella Webbiana*, and *Orchis maculata*.

Messrs. JOHN FORBES, LTD., Hawick, made a striking display with flowers of *Delphiniums*, *Pentstemons*, and shrubby *Phloxes*. Some splendid *Violas* and *Pansies* completed this exhibit.

Messrs. BARR & SONS, Covent Garden, showed pigmy trees in Chinese porcelain pots and bowls.

A choice collection of topiary objects was shown by Messrs. W. CUTBUSH & SON, Highgate, London, N.

IMPLEMENTS AND SUNDRIES.

Messrs. WM. WOOD & SON, Wood Green, had an extensive exhibit of Orchid fibre loam, peat, and Fern rhizomes for the drainage of Orchid pots, "Nidas," a favourite Orchid compost, and many other garden requisites, together with a variety of sprayers and syringes, boxes and packing materials, cutlery for the gardener, wooden trugs to carry fruit, flowers, and weeds, and other useful things.

Mr. J. H. BEAMISH, 27, Regent Street, London, showed a model greenhouse (see fig. 11) with the system of prismatic roofing referred to in the issue for June 18, p. 416.

Messrs. T. SYER & Co., 45, Wilson Street, Finsbury, London, showed telescopic ladders, garden, seats, folding tables, tools, cutting instruments, syringes, watering-pots, and mats of wire capable of being rolled up.

THE MOSTELLE GRAPE JUICE Co., 7, Great Tower Street, E.C., showed unfermented wines.

DE LUZY FRÈRES, Camberwell, S.E., showed their National sprayer, Ideal bellows, and Ideal bird scarer. This scarer is hexagonal-shaped, with looking-glass sides, and furnished with a swivel, so that it may be hung in a tree and turn round perpetually when the wind is blowing.

THE BOUNDARY CHEMICAL Co., Cranmer Street, Liverpool, showed their Kap-All fumer and Climax disinfectant, and Alpol, a preparation for destroying underground pests.

Messrs. BENTON & STONE, Birmingham, "Enots," showed a good assortment of sprayers and syringes.

Mr. C. W. ARMITAGE, 104, Kenyon Street, Fulham, showed "Quixol," for cleaning cloth, &c.

The Alpha sprayer sold at Ross, Herefordshire, appears to be a handy knapsack appliance for the extinguishing of fires.

Messrs. ABBOTT, BROS., Southall, showed fruit-preserving bottles with silvered caps.

Fruit and general bottling outfits were shown by Messrs. G. FOWLER, LEE & Co., Reading, Berks.

Garden earthenware was displayed by Messrs. D. DOWELL & Co., Ravenscourt Avenue, Hammersmith; and artistic-looking plant-tubs from Messrs. PRADEL & Co., 18, Windmill Street, W.

THE FOUR OAKS NURSERY Co., Sutton Coldfield, Birmingham, showed sprayers in copper and tinned copper, and corrugated syringes.

Messrs. FENTON & SON, Tudor Street, Dorset Street, London, E.C., showed gas-heated baths, radiators, boilers, &c.

THE LAMP PUMP SYNDICATE, LTD., 12, Carey Street, Westminster, S.W., showed a lamp pump in action of the shallow-well type, a machine that delivers, at a height of 60 feet, 300 gallons per hour.

Messrs. B. MAGGS & Co., Bristol, showed garden seats of various patterns in Oak and Teak, under the names Blenheim, Arethusa, and Agamemnon.

Mrs. G. F. WATTS, The Village Industry, Compton, Guildford, showed pots, vases, sundials, and window-boxes.

Garden seats, hammocks, and garden tents without centre pole, were shown by Messrs. C. & W. BUSWELL, Victoria Works, Torquay.

Castle's man-o'-war Teak-wood garden seats were shown by Messrs. CASTLE & Co., Baltic Wharf, Millbank, London, S.W.

Lawn mowers were shown by Messrs. LLOYD, LAWRENCE & Co., who displayed those known as Pennsylvania mowers.

Messrs. DOULTON & Co., LTD., Lambeth, S.E., showed vases, plinths, statues, and pedestals in artificial stone, well finished and artistic in character.

THE PATENT LADDER Co., Peterborough, showed specimens of their ingenious goods for the use of gardeners.

Messrs. PIPER, Bayswater, W., showed red earthenware, tubs, pots, vases, &c.

Wall trellises, pergolas, seats, ladders, shading for glasshouses and other garden sundries were exhibited by Messrs. WALTER & Co., Amberley Works, Croydon.

Messrs. TOOPE & SON exhibited oil and gas stoves and other heating appliances.

Mr. A. C. HARRIS, Leicester, showed a clipper and holder for use in gathering flowers and fruit and for weeding.

Other exhibitors of garden requisites were Messrs. W. HERBERT & Co., Hop Exchange, S.E.; CORRY & Co., LTD.; W. E. CHANCE & Co., Oldbury; and Messrs. F. G. WOOD, 161-163, Walworth Road, S.E.

AWARDS MADE BY THE COUNCIL.

GOLD MEDALS.

The Duke of Portland, Welbeck Abbey, Worksop (gr. Mr. J. Gibson), for fruit; Sir Jeremiah Colman, Bart., Gattop Park, Reigate (gr. Mr. Collier), for Orchids; Hon. Vicary Gibbs, Aldenham House, Elstree (gr. Mr. Beckett), for fruits and vegetables; Leopold de Rothschild, Esq., Gurnersbury House, Acton (gr. Mr. Hudson), for terrace plants; Jas. Carter & Co., High Holborn, for Japanese garden; W. Cutbush & Son, Highgate, for Carnations, &c.; H. B. May & Sons, Upper Edmonton, for flowering plants and exotic Ferns; Paul & Son, Cheshunt, for Roses; Wm. Paul & Son,

Waltham Cross, for Roses; Rivers & Son, Sawbridge-worth, for fruit trees in pots; Amos Perry, Enfield, N., for Delphiniums; L. R. Russell, Richmond, Surrey, for Ivies and Water Lilies; Sander & Sons, St. Albans, for Orchids; Sutton & Sons, Reading, for Sweet Peas and Culinary Peas; J. Veitch & Sons, Chelsea, S.W., for stove and foliage plants, &c.; and R. Wallace & Co., Kilmfield Gardens, Colchester, for a streamside and paved garden.

SILVER CUPS.

Sir Randolph Baker, Bart., Blandford, Dorset, for Sweet Peas; the Marquis of Salisbury, Hatfield (gr. Mr. Prime), for fruit; the Rt. Hon. Lord Llangattock (gr. Mr. Coomber), for Pineapples and Strawberries; T. C. Raphael, Esq., Shenley (gr. Mr. A. Grubb), for Carnations and vegetables; S. Heilbut, Esq., for fruit trees in pots; W. Cutbush & Son, Highgate, for shrubs and herbaceous plants; J. Veitch & Sons, Ltd., Chelsea, for Carnations and flowering plants; S. Low & Co., Enfield, for Orchids, Carnations, Roses, and berries; Barr & Sons, Covent Garden, for pigmy trees, Irises, Gladioli, herbaceous plants, &c.; G. Jackman & Son, Chard, for Roses, herbaceous flowers, and Clematis; T. S. Ware, Ltd., Feltham, for Begonias, Alpines, and herbaceous plants; Blackmore & Langdon, Bath, for Begonias and Delphiniums; G. and A. Clark, Ltd., Dover, for herbaceous plants and hardy flowers; W. Fromow & Sons, for Japanese Maples and hardy plants; G. Bunyard & Co., Ltd., Maidstone, for herbaceous plants; B. R. Cant & Sons, Colchester, for Roses; A. Dickson & Sons, Ltd., Newtownards, for Roses; D. Russell & Son, for hardy trees and shrubs; Dobbie & Co., Mark's Tey, for Sweet Peas; Miss H. Hemus, Holdfast Hall, for Sweet Peas; Mr. H. Burnett, Guernsey, for Carnations; Charlesworth & Co., Haywards Heath, for Orchids; Hugh Dickson & Sons, Belfast, for Roses; Mansell & Hatcher, Ltd., Rawdon, Yorkshire, for Orchids; Maurice Prichard, Christchurch, for water garden; and J. Cheal & Sons, Crawley, for pergola group.

SILVER-GILT HOGG MEDALS.

Leopold de Rothschild, for fruits, and Laxton Bros., Bedford, for Strawberries.

SILVER-GILT FLORA MEDALS.

E. J. Johnstone, Esq., Groombridge (gr. Mr. Paskett), for Sweet Peas and Carnations; G. Paul & Son, Cheshunt, for hardy shrubs and herbaceous plants; W. Artindale & Son, York, for hardy plants, Violas, &c.; J. Cheal & Sons, for pergola group and Alpines; J. Peed & Son, West Norwood, for Caladiums, Gloxinias, &c.; Hobbies, Ltd., Dereham, for Roses; F. Cant & Co., Colchester, for Roses; A. F. Dutton, Iver, for Carnations; Frank Lilley, Guernsey, for Gladioli; G. Lange, Hampton, for Carnations; and R. and G. Cuthbert, Southgate, for flowering plants.

SILVER-GILT KNIGHTIAN MEDALS.

Mr. W. Poupart, jun., Twickenham, for bottled fruits.

SILVER FLORA MEDALS.

L. R. Russell, Richmond, for stove and greenhouse plants; Hon. Vicary Gibbs, Elstree (gr. Mr. Beckett), for Pelargoniums; Lord Burnham, Beaconsfield (gr. Mr. Johnson), for Carnations; H. S. Goodson, Esq., Putney (gr. Mr. G. E. Day), for Odontoglossums; S. Bide & Sons, Farnham, for Sweet Peas; C. W. Breadmore, Winchester, for Sweet Peas; C. Engelmann, Saffron Walden, for Carnations; Messrs. Forbes, Ltd., Hawick, for Phloxes, Pansies, &c.; R. Harkness & Co., Hitchin, for Roses; H. Hemsley, Crawley, for Alpine plants and rock garden; Misses K. and E. Hopkins, Shepperton, for herbaceous plants and Alpine garden; E. W. King & Co., Coggeshall, for Sweet Peas; W. J. Unwin, Histon, for Sweet Peas; J. Waterer & Sons, Bagshot, for evergreens; Whitelegg & Page, Chislehurst, for herbaceous plants; Carter Page & Co., London Wall, for Dahlias, Pelargoniums, and Violas; H. H. Crane, Highgate, for Violas and Violettas; Gunn & Sons, Olton, for Phloxes; B. Ladham, Ltd., Southampton, for perennials, &c.; H. Newman Ellison, West Bromwich, for exotic Ferns; W. Wood & Sons, Wood Green, for pergola; C. and W. Buswell, Torquay, for garden tents, &c.; The Four Oaks Co., Sutton Coldfield, for sprayers, &c.; Alex. Hamilton, 87, Great Portland Street, for tubs for shrubs, &c.

SILVER KNIGHTIAN MEDALS.

S. Mortimer, Rowledge, for Melons and Cucumbers, and Le Lacheur & Sherres, for Melons.

SILVER-GILT BANKSIAN MEDALS.

Kelway & Son, Langport, for Delphiniums and hardy plants and Sweet Peas; King's Acre Nursery Co., Hereford, for fruit trees in pots and Roses; Charles Turner, Slough, for Roses and Carnations; R. H. Bath, Ltd., Wisbech, for Carnations and Roses; G. Reuthe, Keston, for hardy plants and shrubs; Bertie Bell, Guernsey, for Carnations; Chas. Blick, Hayes, for Carnations; W. H. Page, Hampton, for Roses, Carnations and Liliums; R. C. Nutcutt, Woodbridge, for hardy plants, Roses and shrubs; Geo. Prince, Oxford, for Roses; and Carlton White, Oxford Street, London, for clipped trees.

SILVER BANKSIAN MEDALS.

E. S. Hanbury, Esq., for fruit; the Rt. Hon. Col. Lockwood, Romford (gr. Mr. G. Craddock), for Tracheliums; W. & J. Brown, Peterborough, for herbaceous plants; Godfrey & Sons, Exmouth, for Campanulas; Mallett & Co., Cheddar, for Irises and herbaceous flowers; Clarence Elliott, Stevenage, for Alpine and rock garden; J. Piper & Son, Bayswater, for Box and Yew trees; H. J. Jones, Ltd., Lewisham, for Pelargoniums and Sweet Peas; R. Sydenham, Ltd., Birmingham, for Sweet Peas; A. Young & Co., Elgin, for herbaceous plants; G. Gibson & Co., Yorks., for herbaceous plants; J. King & Sons, Coggeshall, for Sweet Peas; H. C. Fulham, Elsenham, for herbaceous plants and Alpines; Seagrave & Co., Sheffield, for Violas; B. es, Ltd., Liverpool, for Primulas and her-

baceous plants; A. L. Gwillim, New Eltham, for Begonias; and the Alpha Extinguisher Co., Herefordshire, for spraying machines.

BRONZE FLORA MEDALS.

Messrs. Bastock & Son, Birmingham, for Violas and Gaegas; the Guildford Hardy Plant Nursery, Guildford, for herbaceous plants; Jarman & Co., Chard, for Centaureas; G. Stark & Sons, Norfolk, for Sweet Peas; A. J. Harwood, Colchester, for herbaceous plants; the Castle's Shipbreaking Co., Ltd., Milbank, for garden furniture; W. E. Chance & Co., Oldbury, for bell glasses; B. Maggs & Co., Bristol, for teak seats; the Meath Home, Godalming, for garden baskets; John Pinches, Crown Street, for Rose exhibition boxes, tubs, &c.; and J. P. White, Bedford, for garden seats.

WINDSOR ROSE.

JULY 2.—An excellent show was held by this society on the above date, in the grounds of Windsor Castle, permission to hold the exhibition being granted by His Majesty the King.

The entries were much more numerous than in former years, and all that was needed to ensure success was fine weather: this, unfortunately, was not forthcoming, as one or two very heavy rainstorms fell during the day. The exhibits, and especially those in the open classes, were of excellent quality. The 48 blooms which won the King's Cup for A. DICKSON & SONS, Newtownards, were exceptionally fine, the varieties Mrs. Cornwallis West, Horace Vernet, Mrs. W. J. Grant, Mamie, Mildred Grant, Countess of Annesley, Mrs. David McKie and Lady H. Vincent were all shown in excellent condition. Messrs. BEN. R. CANT & SONS, Colchester, were placed 2nd, and Messrs. D. PRIOR & SONS 3rd.

In the class for 18 Tea or Noisette varieties, distinct, Mr. G. PRINCE, Longworth, Berks., was awarded the 1st prize, having an excellent lot of fresh blooms. Mme. de Watteville, Mme. Jules Gravereaux, and Molly Sharman Crawford were splendid. Messrs. FRANK CANT & Co. were a good 2nd, and Mr. HENRY DREW, Longworth, Berks., 3rd.

Messrs. A. DICKSON & SONS were placed 1st in the class for 12 distinct varieties, three blooms of each kind, with a magnificent stand. Some of their more notable flowers were those of Ulrich Brunner, Marquise Litta, Horace Vernet, Bessie Brown, Mildred Grant and Mrs. W. J. Grant (adjudged the best bloom in the show). Messrs. D. PRIOR & SONS were awarded the 2nd prize with fine blooms, and Messrs. BEN. R. CANT & SONS the 3rd prize.

For 12 blooms of any H.P. or H.T. variety, Messrs. HARKNESS were placed 1st with splendid blooms of Mrs. J. Laing; 2nd, Messrs. A. DICKSON & SONS with Lady Ashton; 3rd, Messrs. B. R. CANT & SONS with Dean Hole.

Messrs. DICKSON & SONS were placed 1st in the class for 12 blooms of any Tea or Noisette variety with an excellent stand of Mrs. Foley Hobbs; 2nd, Messrs. B. R. CANT & SONS with Mme. Jules Gravereaux.

In the class for 18 bunches of decorative Roses, Mr. CHARLES TURNER, Slough, was awarded the 1st prize. Lady Battersea, Liberty, Mme. A. Chatenay and Joseph Lowe were notable blooms in this excellent exhibit. Messrs. FRANK CANT & Co. were a close 2nd; 3rd, Messrs. W. & J. BROWN, Peterborough.

Messrs. F. CANT & Co. excelled in the class for 12 blooms of any crimson variety mingled with 12 blooms of any white kind, having fine flowers of J. B. Clarke and Frau Karl Druschki; 2nd, Mr. HENRY DREW; 3rd, Messrs. G. & W. H. BURCH, Peterborough.

In the class for six distinct varieties of Roses shown in vases, five blooms of each in a vase, Messrs. A. DICKSON & SONS won the 1st prize with a very fine exhibit, their examples of Mrs. Theodore Roosevelt, Gertrude and Lady Helen Vincent being excellent; 2nd, Messrs. D. PRIOR & SONS.

AMATEUR CLASSES.

The Windsor Challenge Cup was offered as the 1st prize in the class for 24 blooms, distinct. It was won by E. B. LINDSELL, Esq., with excellent flowers of Bessie Brown, Frau Karl Druschki, Mildred Grant, Helen Keller and others. 2nd, F. DENNISON, Esq.; 3rd, G. A. HAMMOND, Esq.

For eight varieties, three blooms of each, the Princess Alexis Dolgorouki's Cup was offered. E. B. LINDSELL, Esq., was again successful with a beautiful stand of blooms including Frau Karl Druschki, Mrs. T. Roosevelt, and Mildred Grant; 2nd, F. DENNISON, Esq.; 3rd, Rev. PEMBERTON.

CONWAY JONES, Esq., excelled in the class for 12 Teas or Noisette varieties. F. DENNISON, Esq., was placed 1st for three distinct varieties, five blooms of each.

The Rev. PEMBERTON showed the finest 12 bunches of decorative Roses with a very fine exhibit of Mme. A. Carrière, Red Province, Seagull, Claire Jacquier and Rosa Mundi; 2nd, E. MOCATTA, Esq.

Other prizewinners in the amateurs' classes included Messrs. W. ONSLOW TIMES, W. JARRATT, MORPE, CHALMERS HUNT (Rev.), J. B. SHACKLE (Rev.), A. C. TURNER, E. MOCATTA, and E. B. LEHMANN.

There was good competition in the local classes. The "Islet" Challenge Cup was won outright by J. B. FORTESCUE, Esq., with a beautiful stand of flowers. White Maman Cochet in this exhibit was adjudged the best bloom of a Tea variety in the local classes.

E. MOCATTA, Esq., won Lady Evelyn Mason's Cup offered for six bunches of decorative Roses. In the class for growers of fewer than 500 plants, E. F. BROWN, Esq., won the 1st prize. R. HOUSE, Esq., was 1st for six Teas or Noisettes, and the same exhibitor was 1st for six blooms of any variety.

E. WAGG, Esq., won the Marchioness of Normandy's Cup offered for a group of plants consisting of Orchids, Carnations, Gloxinias, Caladiums, *Francoa ramosa*, *Ixoras* and Ferns.

The Lady Mayoress of Windsor offered a cup in the ladies' class for the best decorated dinner-table. This was won by Mrs. MAX ERSTEIN with an excellent table arranged with pink "Malmaison" Carnations, *Gypsophylla* and *Asparagus plumosus*.

Lady TRESS BARRY showed the best Sweet Peas; Mr. J. B. FORTESCUE the best hardy flowers; Mr. J. H. BENSON the best table plants; and Mrs. MOSS COCKLE the finest group of plants and cut flowers.

TRADE EXHIBITS.

Messrs. J. VEITCH & SONS, LTD., Chelsea, showed Sweet Peas and Roses; Messrs. H. B. MAY & SONS, Edmonton, a large collection of Ferns; Messrs. W. PAUL & SONS, Waltham Cross, a stand of the new Rose "Juliet," which attracted much attention; Mr. C. TURNER, Slough, a splendid show of Gloxinias, Iris and hardy flowers; Messrs. G. JACKMAN & SON, Woking, a large group of Roses; and Messrs. TITT & SON, Windsor, floral designs.

Mr. Brice and Mr. Dunn, the joint secretaries, are to be congratulated on the excellent manner in which the arrangements of the show were carried out.

LOUIS VAN HOUTTE CENTENARY.

The fêtes organised to celebrate the hundredth anniversary of the birth of Louis Van Houtte, the great Belgian nurseryman, were held on Sunday, June 26 last, at Gendbrugge. Early in the morning the populace was astir, flags and banners floated in the air in the fronts of the houses, and Venetian masts were erected in the streets, with baskets of flowers half-way up, and surmounted with banners.

At 10.30, the Burgomaster of Gendbrugge held a reception, at which he was supported by the Burgomaster of Ypres, where Van Houtte was born, M. Fred Burvenich, Chairman of the Organising Committee, Louis Van Houtte, the deceased's son, the Sheriffs of Gendbrugge, the members of the Town Council, and the members of the Fêtes Committee. Among the visitors present at the reception, were Messrs. De Bast, de Lanier, Léger, Alexis Callier, Mechelynck, Van Cleemputte, Maenhaut, Roels, A. Ceuterick, Boddaert, Albert Maertens, Fiet, Aug. and Ad. Van den Heede, Henri De Wilde, Jos. de Hemptinne, G. De Ruyck, Kuyck, Jules De Cock, Aug. Van Geert, Peeters, Léon de Smet, R. Monnier, Firmin Lambeau, Cordonnier, Dumont, Edg. Wartel, Baron Casier, Ch. Pynaert, Lucien de Cock, Alphonse Gallet, Maurice Duquesnoy, Arthur De Smet, Baron Léon de Pélichy, Florent Van Hál, Heursel de Meester, Louis Gentil, E. Draps, Firmin de Smet, Van der Valck, Jurissen, A. De Smet, Junr., Herreweghe, Séghers, A. Dachy, Henno and others.

The Burgomaster of Gendbrugge reminded the assembly that, in 1879, they unveiled a statue to the memory of Louis van Houtte, and that they were there on this occasion to celebrate the cen-

tenary of the birth of this great man, who might justly be called the founder of Belgian horticulture. Gendbrugge was proud of him, of his many achievements, and of his nursery, from which was issued *La Flore des Serres*. For 22 years he worthily fulfilled the duties of magistrate. Louis Van Houtte's biography had already been written by M. F. Burvenich, and would be distributed in book form among the visitors and subscribers to the fête. The Burgomaster then complimented M. Burvenich upon the part played by him in inaugurating and carrying out the commemoration.

M. Burvenich replied. There were still some old employés of Van Houtte in the nursery, and he had pleasure, in the name of the Fête Committee, in handing to each of those present souvenirs of their long connection with the firm. The Burgomaster then drank to the success of the Fête, and the *Livre d'Or*, with an illuminated front page, was signed by all those present.

The delegates from the various horticultural societies then proceeded in a procession to the Van Houtte monument, where M. Burvenich made a speech, relating the chief incidents in Van Houtte's career. It was a lengthy and eloquent recital of the great nurseryman's achievements. He referred also to the revolution of 1830, in which Van Houtte took an active part, and reminded his hearers that Belgium was not wanting, as some supposed, in patriotism. She was a young nation, and her independent existence only dated back to 1830, therefore they had not many occasions to celebrate.

The Burgomaster replied, accepting, on behalf of the town, a bronze plaque presented by the committee to commemorate the event, which would remind future generations that June 26, 1910, was a memorable day for all the friends of gardening. The gathering afterwards placed at the foot of the monument wreaths and bouquets of flowers, in the name, and on behalf of, the many societies represented.

The procession then reformed, and proceeded in the direction of the Van Houtte nurseries, where, at half past 12, the official opening of the Horticultural Exhibition took place. This remained open until the Tuesday evening. The Managing Director and other members of the board welcomed the visitors in a speech to the following effect. "When the Louis Van Houtte Centenary Committee asked us to participate in the fête, we accepted with the greatest pleasure, for we thought with them that his memory might well be recalled in the establishment which he founded. It was in 1837, after an adventurous voyage to Brazil, that Van Houtte settled here. He began in a small way, with not much land and a few greenhouses. Of course, horticulture existed long before Louis Van Houtte, but he gave to it a great impetus. He really created scientific horticulture, and made of it a branch of education. This is so far true that, in 1849, the Government, by Royal decree, started the two first schools of horticulture in Belgium—the practical school at Vilvorde, and the scientific school, entrusted to Louis Van Houtte, in his own nursery. Van Houtte was quite equal to the task that the Government put upon him. He undertook the charge of the school, got together his co-workers, and his pupils soon became professors. Years have passed, and Van Houtte and most of the early scientific horticulturists are gone, but one still remains as young as ever, M. Fred Burvenich, whom I am pleased to see here to-day. Louis Van Houtte was also a writer. He started *La Flore des Serres*, and published in it many articles that attracted the attention of the whole world. Still he remained a nurseryman, still he worked, still he wrote. A limited liability company has taken the place of the old firm. Above all, it religiously keeps up the name of its founder, and the board is pleased to have in its midst M. Louis Van Houtte, the son of him of whom I have been speaking."

The visitors then proceeded to view the show prepared for them in the Van Houtte nurseries. The 82 greenhouses and gardens were visited in turn. At 1.30 p.m. the visitors adjourned to lunch; M. Verdonck presided.

Afterwards there was a grand procession of triumphal cars, many of them carrying allegorical representations of different important horticultural events. It was preceded by gendarmes on horseback, and, at intervals, bands of music followed.

The day's proceedings were brought to a close

by a grand banquet held in a saloon of the Royal Agricultural and Botanical Society. Again, M. Verdonck presided, being surrounded by a numerous company of Belgian horticultural celebrities. Among the speakers were M. Burvenich, M. Verdonck, the Burgomaster of Ghent, the Burgomaster of Ypres, M. Callier, M. de Hemptinne, the Baron de Pélichy, M. Arthur de Smet, M. Louis Van Houtte, and others.

THE WEATHER.

THE FOLLOWING SUMMARY RECORD of the weather throughout the British Islands, for the week ending July 2, is furnished from the Meteorological Office:—

GENERAL OBSERVATIONS.

The weather.—A very unsettled condition prevailed throughout the week, precipitation generally in showers being very frequent. Thunderstorms were experienced at a few stations in eastern England on Wednesday, at many places in that district and in some parts of northern England on Thursday, and over the eastern half of England and at some places in the east of Scotland on Friday, while on Saturday they were very general over the eastern half of England, and also occurred at some western stations and in Scotland.

The temperature was below the normal, the deficit being about 2½° in the English Channel and between 3° and 5° elsewhere. The highest of the maxima were generally recorded either on Monday or Tuesday, and ranged from 70° in England S.E. to 63° in England N.W. At many of the western and northern stations, and also at Portland Bill, the thermometer remained below 60° during the greater part of the week. The lowest of the minima, which were registered at most stations early in the week, ranged from 30° in Scotland E. (at Balmoral on Tuesday) and 38° in Scotland W. to 46° in Ireland N. and to 47° in Ireland S. and the English Channel. The lowest grass readings reported were 26° at Balmoral, 32° at Crathes, 33° at Hereford, 34° at West Linton and Shetland, and 35° at Durham, Glasgow, Newton Rigg, and Llangamma ch Wells.

The mean temperature of the sea was generally higher than during the corresponding week of last year in the east, and lower in the west and north. At Wick it was nearly 7° lower. The mean values ranged from about 61° at Margate and Eastbourne, 60° at Newquay, and 59° at Seaheld, to below 54° on most parts of the north-west, north, and north-east coasts of Britain, and to 50° at Wick.

The rainfall exceeded the mean in all districts, the excess being large in several parts of England and in Ireland N., very slight in Scotland W. and the English Channel.

The bright sunshine was less than the normal, the deficit being considerable except in the south of England and the English Channel stations. The percentage of the possible duration ranged from 49 in the English Channel, 39 in England S.E., and 35 in England S.W. to less than 20 in the north of Ireland and the north and east of Scotland, the lowest value being 12 in Scotland N.

THE WEATHER IN WEST HERTS.

Week ending July 6.

Another cold, wet, and sunless week.—During the last fortnight there has not been a single warm day, and during the past week only one warm night. On the two coldest nights of the week the exposed thermometer fell to within 7° of the freezing point. The ground is at the present time 2° colder at 2 feet deep, and 3° colder at 1 foot deep than is seasonable. Rain has fallen on nine of the last 13 days, and to the total depth of 2½ inches. Two and a quarter gallons of rain water have come this morning through the bare-soil gauge, and about three-quarters of a gallon through that on which short grass is growing. The latter gauge had previously been quite dry for nearly three weeks. The sun shone on an average for only five hours a day, which is more than an hour a day short of the mean duration for the time of year. The wind has been as a rule rather high, and throughout the week the direction has been some westerly point of the compass. The mean amount of moisture in the air at 3 p.m. exceeded a seasonable quantity for that hour by as much as 10 per cent.

JUNE.

A warm and wet month.—Taken as a whole, this was the warmest June for 11 years, although throughout the last week the temperature remained persistently low for a summer month. The nights were as a rule more unseasonably warm than the days. On the warmest day the temperature in the thermometer screen rose to 79°, which is about the average extreme maximum for the month, and on the coldest night the exposed thermometer registered a temperature only 3° above the freezing point, and yet this is rather a high extreme minimum for June. Rain fell on only 11 days, but to the aggregate depth of 3½ inches, or 1½ in excess of the average for the month. There was a very heavy rainfall of short duration on the 9th, when 1½ inch was deposited in 35 minutes—the total fall on that day being 1½ inch. In the middle of the month there was a dry period lasting 12 days. The sun shone on an average for six hours a day, which is 10 minutes a day short of the average duration for June. The winds were as a rule light, and in the windiest hour the mean velocity was 18 miles—direction W. The mean amount of moisture in the air at 3 o'clock in the afternoon exceeded a seasonable quantity for that hour by 4 per cent. E. M., *Berkhamsted*, July 6, 1910.

CATALOGUES RECEIVED.

F. HERBERT CHAPMAN, Rye—Daffodils.
GEORGE BUNYARD & Co., Ltd., The Royal Nurseries,
Maidstone—Strawberries.

GARDENING APPOINTMENTS.

[Correspondents are requested to write the names of persons and places as legibly as possible. No charge is made for these announcements, but if a small contribution is sent, to be placed in our collecting Box for the Gardeners' Orphan Fund, it will be thankfully received, and an acknowledgment made in these columns.]

Mr. W. MUNT, for the past 10 years Gardener to W. BAILEY HAWKINS, Esq., and previously for 44 years Foreman at Aldenham House, Elstree, as Gardener to E. CHANDLER WALKER, Esq., Willistead, Walkerville, Ontario, Canada.

Mr. H. V. MANN, for the past 8 years Gardener to Sir CHARLES BUGGE PRICE, Bart., Spring Grove, Richmond, Surrey, as Gardener to Sir EDWIN CORNWALL, M.P., Oaklands, Horley, Surrey.

Mr. G. W. WHYMAN, formerly Gardener to the late Mrs. GODDARD, The Elms, Crawley, Sussex, as Gardener to J. J. W. MILLER, Esq., Colwood, Warringlid, Haywards Heath, Sussex.

Mr. C. CHANDLER, for the past 1 year and 8 months Gardener to R. C. FORSTER, Esq., Vasterne Manor, Wootton Bassett, as Gardener to Sir HENRY EARLE, Norton Lodge, Yarmouth, Isle of Wight.

Mr. WILLIAM CAIRNS, for the last 24 years Gardener to Mrs. PHILLIPS, Caversfield House, Bicester, Oxon., as Gardener to F. SELME-RADCLIFFE, Esq., J.P., Hitchin Priory, Hitchin, Herts.

Mr. C. H. SNOOK, for the past 17 years Gardener to the late Mrs. JULIA SCARAMANGA, West Hill, Shanklin, I.W., as Gardener to C. SCARAMANGA RALLI, Esq., at the same place. (Thanks for 2s. received for R.G.O.F. Box.—Eds.)

Mr. W. C. DAVIS, late Gardener at Coleshill Park, Birmingham, as Gardener to ERNEST STEVENS, Esq., Prescott House, Stourbridge, Worcestershire.

DEBATING SOCIETIES.

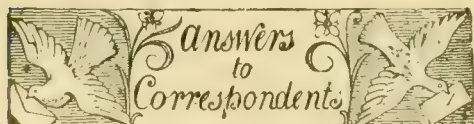
BRISTOL & DISTRICT GARDENERS'.—A well attended meeting of the above society was held on June 30, at St. John's Parish Rooms. Mr. Hayball presided. Mr. Hollingworth, horticultural lecturer for the Gloucestershire County Council, gave a lecture on "Some Points About Pruning." Mr. Hollingworth said the first object of pruning was to establish form. Standard trees require little pruning beyond the removal of unsuitably placed shoots and the weaker ones, where they are crowded; but trained trees require severe branch pruning, as well as root pruning. A special feature at the meeting was a competition for bunches of wild flowers, shown by under gardeners. Mr. Fred Clark was placed first, and Mr. J. Perry second.

BATH GARDENERS'.—The monthly summer meeting of this society was held on Monday, June 27, in the Foresters' Hall, Bath Street. The president, Mr. C. T. Foxcroft, presided over a large attendance. Mr. C. Wakefield, of the Bristol Association, gave a lecture on the "Tuberous Begonia." He reviewed the history of the Begonia and gave full cultural details.

Obituary.

DAVID PLENDERLEITH.—The sudden death of this well-known Scottish gardener from heart disease, on June 18, is recorded. Mr. Plenderleith was a successful exhibitor at the shows of the Royal Caledonian Horticultural Society, being a skilful cultivator of greenhouse plants.

JOHN MAXWELL.—We learn from the American gardening papers of the death of this nurseryman, a native of England, who settled in California some 25 years ago. His business was at Napa, where he died on May 27, at the age of 55 years. He was a successful grower of fruit trees and nursery stock.



ABIES DOUGLASII AND LARCH: H. P., *Aberdeen*. Both trees are badly affected with *Botrytis Douglasii*, a fungus that is most injurious to Conifers in nurseries. Spraying with Bordeaux mixture is the most certain means of checking the disease.

CINERARIAS, CALCEOLARIAS, AND PRIMULAS: *Constant Reader*. Although these plants may be grown to flower in the early winter months, the best results are obtained from those which bloom late in winter and spring. For that purpose seeds of *Cineraria* and *Primula sinensis* should be sown in May and June, whilst seeds of herbaceous *Calceolarias* may be sown in June and July. The seed pans or pots should be well drained, and filled to within an inch of the rims with a compost consisting of three-parts loam and one part leaf soil and sand. The soil should be well watered before the

seed is sown. Seed of *Cinerarias* and *Primulas* should be only lightly covered with soil, and that of *Calceolarias* must be sown on the surface. Lay a sheet of glass or paper on the pans, and place the latter in a frame; afford shade during sunshine, or, preferably, place the frame on the north side of a wall, and keep it somewhat close and moist until the seedlings appear. When these are strong enough to handle, they should be transplanted into pans, and returned to the cold frame or pit. They will soon be ready to be potted into 3-inch pots, and later into larger ones. These plants succeed best in a cold frame or pit during the summer, but in the autumn the *Primulas* should be placed in the greenhouse. *Cinerarias* and herbaceous *Calceolarias* succeed well during the winter in a shallow pit where artificial heat can be afforded, so as to maintain a minimum temperature of 38° to 40°. If the plants are in a position exposed to the sunshine during the heat of the day, a light shading should be employed.

CULINARY PEA: G. J. Your Pea is evidently one of the French field or grey Peas, and most resembles *Pois Gris de Printanges*, a tall variety, or *Pois Perdix*, also one of the same strain. These Peas are grown in the field in France as forage plants, and have no edible value otherwise. They are not suitable for garden cultivation.

EARLY MARKET BEANS: A. D. The supplies of Beans in Covent Garden market in early spring are sent principally from France, and the Channel and Canary Islands. The principal varieties marketed at that season are *Negro Long Pod*, *Canadian Wonder*, and *Ne Plus Ultra*. You can obtain the addresses of the principal growers by applying to some salesman in Covent Garden Market who deals in this produce.

EXPORTING WATER LILIES TO SOUTH AFRICA: *Correspondent*. If the plants for exportation are growing in pots, they may be sent safely at the present time, packing them in damp moss. If they are not in pots, they should be kept for three months until the growth is better matured; in the latter case, they would arrive in South Africa at the beginning of the growing season, and they might be depended upon to recommence growth almost at once. In this instance, as in the former, they should be packed in damp moss. The safest method, however, of exporting *Nymphaeas* is by seeds.

GOOSEBERRY LEAVES DROPPING: C. P. & Co. The foliage is smothered with red spider. Spray the bushes with a solution of soft soap and paraffin. No fungus disease is present.

GRAPES DISEASED: F. G. B. The berries are affected with "spot." See reply to W. McG. in the last issue, p. 12. The specific recommended will not injure the branches.

HELIOTROPE DISEASED: E. L. A fungus, *Phoma heliotropii*, is causing the injury. Dip the plants in a rose-red solution of permanganate of potash or spray them with the same specific three times at intervals of three days.

NAMES OF PLANTS: H. B. 1, *Inula glandulosa*; 2, *Centranthus ruber* var. *albus*; 3, *Spiraea filipendula* fl. pl.; 4, *Thalictrum aquilegifolium*; 5, too scrappy for identification; 6, *Hieracium aurantiacum*.—W. A. H. *Erysimum Perovskianum*.—W. R. P. *Digitalis lutea*; *Centaurea dealbata*; *Hemerocallis fulva*.—Geo. Haig. *Syringa japonica*.—A. F. D. 1, *Gladiolus segetum*; 2, *Iris orientalis*; 3 and 4, forms of Spanish *Iris* (*I. Xiphium*); 5, *Lychnis chalcedonica*; 6, *Potentilla atrosanguinea* fl. pl.; 7, *Allium Moly*; 8, *Erigeron philadelphicus*; 9, *Hemerocallis fulva*; 10, *Allium neapolitanum*; 11, *Rubus odoratus*.—F. B. 1, *Spiraea discolor*; 2, *S. japonica* var.; 3, *Lysimachia* sp. (too scrappy for identification); 4, *Gillenia trifoliata*.—H. A. T. The variegated variety of *Agapanthus umbellatus*.—R. H. 1, *Odontoglossum Lindleyanum*; 2, *Oncidium flexuosum*; 3, *Gongora portentosa*; 4, *Maxillaria picta*; 5, *Brassia verrucosa*.—F. M. 1, *Pteris tremula*; 2, *P. serrulata*; 3, *Adiantum hispidulum*; 4, *Blechnum brasiliense*; 5, *Adiantum assimile*; 6, *A. pedatum*.—T. J. H. (*Dartmouth*). 1, Not recognised; 2, *Galega officinalis*; 3, *Hypericum patulum*; 4, *Polygala*

Dalmaiseana; 5, *Ecchremocarpus scaber*; 6, *Cotoneaster Simonsii*.—J. W. A. Send a flower of the *Vanda*.

PACKING STRAWBERRIES: G. T. Your method of packing Strawberries in shallow boxes is the one generally adopted. The box should be first lined with cotton-wool; over this place a sheet of thin paper, then pack the fruits firmly in a soft leaf, with their points tilting in an upward direction. Young Strawberry leaves are quite suitable for this purpose, and if they are gathered overnight and placed in the packing-room, they will become softer, and not so liable to rub the fruit. We do not recommend the use of cotton-wool to cover the fruits when packed. The better plan would be to place a layer of vine leaves over the fruit, as these keep the fruit much cooler than would be the case with cotton-wool. It must be seen too that the whole is quite firm when packed to prevent any movement during transit. The depth of the boxes should be about 2 inches, and each box should be large enough to contain 1 lb. of fruit only.

PEACH LEAVES: H. D. L. C. The leaves are affected with "Blister," caused by the fungus *Exoascus deformans*. As a preventive, plant the trees against walls facing south in a sheltered part of the garden. Remove any diseased leaves as soon as detected, burn them, and prune those branches bearing diseased leaves beyond the point of infection. Spray with dilute ammoniacal solution of copper carbonate at intervals.

PEACH STONES SPLITTING: E. K. Although the main cause of Peaches splitting at the stone is an excess of moisture at the roots, the defect is largely constitutional, and trees liable to stone splitting should be replaced by others. Your case appears to show that it is due to some weakness in the individual, as none of your other Peach trees develops fruits with split stones.

POTATOS DISEASED: T. B. The common Potato disease is present. Spray the plants with Bordeaux mixture, which is the only means of preventing the spread of the disease.

SOIL FOR EXAMINATION: W. B. The sample of loam appears, from a superficial examination, to be suitable for the cultivation of Melons, but this cannot be stated with certainty unless the loam is analysed. If you are a Fellow of the R.H.S., you can submit the soil for analysis to the Society's chemist, Dr. Voelcker, 22, Tudor Street, E.C., who will accept the task for a small fee.

SWEET PEAS AND ONIONS: *Bostonian*. The Pea roots are destroyed by millipedes, and the Onions are attacked by the Onion maggot. A good dressing of gas lime would clear the soil of these pests.

TEAK WOOD FOR SHELVES IN PLANT HOUSES: N. L. Unpainted teak wood is commonly used for forming shelves and stages in Orchid houses, and it is found to be very durable and it is not liable to harbour fungus, even when old. We assume you mean shelves for fixing over the paths or along back walls. Teak or Oak wood would do well for either purpose. Shelves are usually formed of whole planks, but wide shelves might be made trellis-like with spaces between the strips of wood similar to an open wood-work stage. In all cases where shelves are placed over staging bearing plants, the cultivator must take means to prevent injury to the stage plants arising from drip.

TRIFOLIUM MINUS: G. & M. Do not include any variety of Clover in lawn Grass seeds unless they are specially ordered.

WISTARIA: W. A. H. No disease is present to account for the trouble, which must be looked for in some other direction; most probably the roots are in an unsatisfactory condition.

Communications Received.—J. W. A.—W. V. G.—A. M. S.—C. J. M.—E. V. B.—O. O. W.—C. S.—I. J.—L. H.—W. K.—W. Dulwich—J. R. S.—G. W.—F. W. F.—T. J. H.—C. D. M.—H. P.—J. K.—I. E., Exeter—M. B.—Westminster—Co. Wicklow—C. S. & Co.—J. C.—T. S.—A. B. H.—B. G.—E. W. & Sons—L. & H.—G. P. P.—J. D.—E. M.—A. & B., Ltd.—F. W. J.—W. F.—F. M.—J. M.—A. D.—H. S.—T.—Chloris—A. G. S.—W. I.—H. J. E.—Dr. P. G.—W. P. & S.—H. S. T.—Charles E. P.—George S.—Practical—H. Wilson (next week)—A. E. J.—Juvenile—G. M.—J. D. J.—K. M.—A. G.—C. A.—F. J.—F. M.—E. H.



A FORMAL GARDEN AT THE WARREN HOUSE, STANMORE, THE RESIDENCE OF MRS. BISCHOFFSHEIM.



THE Gardeners' Chronicle

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DENDROLOGICAL NOTES.*

GRAF VON SCHWERIN, the President of the German Dendrological Society and editor of its publications, contributes a somewhat elaborate and—horticulturally, at least—complete monograph of the genus *Sambucus*. No synopsis of all the species of *Sambucus* has appeared since that in De Candolle's *Prodromus*, vol. iv., 1830, and Graf von Schwerin's work will be found a most useful addition to the literature of garden plants.

THE GENUS SAMBUCUS.

Sambucus comprises about a score of species widely dispersed in both the old and new worlds, though none has hitherto been found in extra-tropical South Africa. They inhabit temperate and sub-tropical regions, all round the northern hemisphere; extending southward in America, in the Argentine Republic, to about 45°; in Africa to German East Africa, south of the equator; and in Australasia to Tasmania. The distribution of all the species is illustrated by means of maps with outlined areas in colour, supplemented by localities after each description. We are somewhat puzzled by the areas outlined for the two Australian species, *S. Gaudichaudiana* and *S. australis*, both of which areas include nearly the whole of New Guinea, though no species, so far as we are aware, has been re-

corded from any part of that country. But on coming to the details of the distribution of the two species in question, we are surprised to find the range given as East Australia and New Holland. At first it seemed that New Holland might be a slip for New Guinea, but this is disproved by the record—Australia: Brisbane, Bailey; New Holland: Montes Caerulei, Lesson!

With regard to the one species found in German East Africa, Graf von Schwerin appears to have overlooked Dr. Engler's publication of it as a variety of *S. Ebnulus* (which it is) and has referred it to an Indian species, *S. adnata*, Wall., with the remark that it must certainly have been carried to Africa by birds of passage. In this connection it may be mentioned that a revision and definition of the Indian species of *Sambucus*, by Mr. J. Hutchinson, appeared in the *Kew Bulletin* for 1909, pp. 190-192. Full synonymy is given by Graf von Schwerin under each species and variety, from which it appears that there has been great confusion in the application of names to plants under cultivation. The author defines no fewer than twenty-five varieties of *S. nigra*, differing in the cutting, colour or variegation of the leaves, and in the colour of the fruit. Curiously enough, under domestic applications of *S. nigra*, he makes no mention of Elderberry wine, formerly generally made in the south of England, and still not uncommon in some parts of Sussex. A very showy coloured plate represents the ripe fruit of *S. intermedia* var. *neo-mexicana*, *S. nigra* var. *viridis*, *S. canadensis*, *S. melanocarpa*, *S. calli-carpa* and *S. racemosa* var. *flavescens*. We might extract many more interesting details, but anyone interested in the genus must not fail to consult this monograph. Graf von Schwerin gives a list of the species and varieties which he had in cultivation in 1909. It includes seventeen out of twenty-one known species and about fifty varieties. He appeals to cultivators for seeds or cuttings of the missing ones. We may add that *S. Fontenaysii* of Carrière is the only hybrid recognised by the author, and that the parentage given is *S. cærulea* ♀ x *S. nigra* ♂.

THE DOUGLAS FIR.

The contribution on the coast and mountain forms of the Douglas Fir deserves attention, as it includes a great variety of information. According to the author, E. H. Frothingham, no other North American tree of commercial importance is so widely distributed as the Douglas Pine, nor has any other conifer introduced into Europe found the same favour with foresters. The Douglas Fir ranges through about 25 degrees of latitude, from the 35th degree northward, and about as many degrees of longitude, from the hundredth meridian westward. The coast form—the superior form—occurs in Oregon from sea-level up to 6,200 feet. With respect to the greatest height attained by the coast form of the Douglas Fir, Mr. Frothingham gives some figures which can only be accepted as approximations. Some reliable measurements are given in vol. xlvii. of the *Gardeners' Chronicle*, p. 69 and p. 203, of the height of the tallest trees in the world, where Mr. Frothingham's figures are discussed. Mr. Frothingham describes the coast form of the Douglas Fir as much superior to the mountain

form, and as having spreading branches and larger female cones (flowers) with appressed bracts (carpellary scales). The mountain form has ascending branches and smaller cones with spreading bracts. Frothingham's paper is repeated in summary, in the *Mitteilungen*, without any explanation,† but it is supplemented by some remarks on the cultivation in Germany of the Douglas Pine and the Sitka Spruce, from which we learn that the coast and mountain forms of the former are there distinguished as the green and grey varieties respectively, otherwise *Pseudotsuga Douglasii viridis* and *P. Douglasii glauca*. Of all the foreign timber trees cultivated on a considerable scale in Germany the Douglas Fir, it is stated, stands well first, and its cultivation is rapidly extending. It is highly prized in that country, both on account of its rapid growth and the excellence of its timber.

JAPANESE CHERRIES.

Prof. E. Koehne contributes a critical, descriptive account of the Japanese, ornamental Cherries of the section *Pseudocerasus* introduced into German gardens. He recognises eight types or species, namely: *Prunus Sargentii*, *P. serrulata*, *P. paracerasus*, *P. pseudo-cerasus*, *P. subhirtella*, *P. pendula*, *P. Herincquiana*, and *P. canescens*, with definitions of numerous varieties. As the author remarks, he has attempted a very difficult task, and if he has not succeeded in reaching finality he has produced a most useful classification of all the garden varieties.

CORNUS MACROPHYLLA.

The same author has an article headed "What is *Cornus macrophylla*?" As long ago as 1896 Dr. Koehne attempted to clear up the confusion existing in the nomenclature of the Asiatic species of *Cornus* having respectively alternate and opposite leaves. Unfortunately, the named specimens at Berlin on which he relied were incorrectly determined; consequently his new name *C. corynostylis* became attached to the wrong species. In the June number of the *Botanical Magazine* of 1909 a figure (plate 8,261) of *Cornus macrophylla*, Wall., was published, and incidentally the synonymy was corrected by the writer, according to his views of the species. Subsequently, in October, 1909, a more detailed exposition of the facts appeared in the *Kew Bulletin*, pp. 329-335, together with descriptions of some new species and determinations of other specimens collected by Mr. E. H. Wilson, on his second mission to China, in which work the author had the valuable assistance of Dr. C. K. Schneider. In the present article, Prof. Koehne accepts the revised synonymy, except that he regards *C. brachypoda*, C. A. Meyer, as specifically different from *C. macrophylla*, Wall., basing his view on characters which could not be tested on the majority of the numerous specimens we had before us. More recently Dr. W. Wangerin has published a monograph of the Cornaceæ in Engler's *Das Pflanzenreich*, Heft 41, April, 1910, where he states that *C. brachypoda* and *C. macrophylla* appear to be quite distinct species. This is not the writer's opinion, based upon dried specimens and fresh material of the plant figured in the *Botanical Magazine*, plate 8,261.

* Extracted, with comments, from the *Mitteilungen der Deutschen Dendrologischen Gesellschaft*, 1909. Octavo, pp. 407, with numerous illustrations.

† Since the above extracts were made we have discovered that Frothingham's paper first appeared in English as Circular 150 of the Forest Service of the United States Department of Agriculture; to which we find no reference in the *Mitteilungen*.

RECENT INTRODUCTIONS FROM CHINA.

Mr. Alfred Rehder, of the Arnold Arboretum, Boston, U.S., contributes a list of the genera of shrubs and trees raised in that establishment from seeds and cuttings collected by Mr. E. H. Wilson, independently of the collections made by the latter for Messrs. James Veitch & Co. The list includes 151 genera, many of them represented by a number of gatherings, though, of course, not necessarily by the same number of species. Thus: *Acer*, 23; *Actinidia*, 8; *Berberis*, 24; *Betula*, 10; *Celastrus*, 16; *Celtis*, 9; *Clematis*, 27; *Cornus*, 7; *Cotoneaster*, 21; *Deutzia*, 5; *Evodia*, 10; *Gleditsia*, 4; *Ilex*, 7; *Lespedeza*, 7; *Ligustrum*, 5; *Lonicera*, 24; *Neillia*, 3; *Photinia*, 6; *Pinus*, 22; *Prunus*, 53; *Pyrus*, 15; *Quercus*, 44; *Rhamnus*, 9; *Rhododendron*, 63; *Ribes*, 15; *Rosa*, 24; *Rubus*, 48; *Salix*, 21; *Schizandra*, 11; *Smilax*, 13; *Spiraea*, 15; *Staphylea*, 6; *Vaccinium*, 4; *Viburnum*, 29; and *Xanthoxylon*, 3. Many others are represented by two or more gatherings. Adding these to the immense collections made by Mr. Wilson during his first two journeys for Messrs. Veitch, we have a total unequalled by any previous collector in any part of the world.

THE LARGEST AND OLDEST LIME TREE IN GERMANY.

A figure is given of a veteran Lime tree, supposed to be the thickest and oldest in all Germany. It is growing in the neighbourhood of the town of Staffelstein, in the district of Oberfranken, Bavaria. The main trunk, of which the remains are from 12 to 15 feet high, is 24 metres (80 feet) in circumference. The age of this tree is estimated at 2,000 years. From the rim of the trunk, which, near the top, is encircled by a hoop of iron, rise several secondary stems, and they appear to be flourishing. *W. H. B.*

ORCHID NOTES AND GLEANINGS.

CATTLEYA WARSCEWICZII (GIGAS) ALBA IN AMERICA.

This plant (see fig. 12), imported last year by Messrs. Lager & Hurrell, of Rutherford, N.J., had its first public exhibition at the Orchid Show of the Massachusetts Horticultural Society in Boston, Mass., U.S.A., May 26 to 30, 1910. The plant was received by Messrs. Lager & Hurrell in the latter part of August, 1909, and was potted early in October. It made a strong bulb, and opened its flowers the first week in the following May. The sepals, petals and lip are pure white, and the throat greenish yellow. The plant is now dormant, but it will probably send forth two, if not three, growths in the coming season, judging by the eyes now showing. *G. P. P., for the Horticulture Publishing Company, Boston, Mass.*

CATTLEYA MENDELII "STUART LOW."

Our illustration (see fig. 13) represents the two plants of the pure, white-flowered form of *Cattleya Mendelii* exhibited by Messrs. Stuart Low & Co., Bush Hill Park, Enfield, at the Royal Horticultural Society's exhibition at Holland Park on July 5 this year, when it gained a First-class Certificate from the Orchid Committee. *Cattleya Mendelii* is not so prolific in albinos as most of the others of the *C. labiata* section, and this form was the finest yet seen. It would be difficult to imagine a more perfect white *Cattleya*. It is an interesting circumstance that Messrs. Low showed the first albino of this species as *Cattleya Bluntei* at a great show at the Royal Aquarium, Westminster, and reported in the *Gardeners' Chronicle*, June 3, 1876, p. 735, "Under the name of *Cattleya Bluntei*, Messrs. Hugh Low & Co., Clapton, exhibited a new and very fine, pure white variety, somewhat resembling *C. Mendelii* in form, and having a beautifully fringed lip." That plant is generally admitted to be an albino of *C. Mendelii*.

DENDROBIUM CARINIFERUM.

FLOWERS of this pretty Burmese *Dendrobium* are sent by Mr. C. Wright (gr. to the Hon. N. Charles Rothschild, Ashton Wold, Oundle), the plant from which they were taken having a good show of bloom. The flowers, which are nearly 2 inches across, are in pairs and threes, the deeply-keeled, sepals are ivory-white, tinged with buff-yellow at the backs and outer halves. The broader, ovate petals are white and the labellum orange-red at the base, the colour being continued into the whitish margin along the vein, which bears long, woolly hairs. *D. cariniferum* is of the nigro-hirsute section, which includes *D. Draconis*, *D. formosum*, and *D. infundibulum*, and requires similar treatment to those species.

BRITISH ALPINE GARDENS.

(Concluded from page 13.)

I HAVE known the gardens at Wisley since 1885, and was there with my late friend Wilson, when they were first opened. Since then, I have been to Wisley four times, but I do not yet know how to reach that very out-of-the-way place. On

What is there to be said of South Lodge and Leonardslee that has not been said already? Both places are marvellous, and nobody must be surprised if I call that corner of England a Terrestrial Paradise.

South Lodge is a beautiful picture to the eyes, and Leonardslee a solace to the heart. Which of them is the dearer to me I cannot say. The artist would prefer South Lodge, the naturalist and the sportsman, Leonardslee.

At South Lodge, the shrubs—all the shrubs of the world are there, at least those which will succeed in England—are grouped artistically, enframed in dark green trees, and the colours are so combined that they gave value one to another.

The *Rhododendrons* and *Azaleas* were beautiful, and not too many of them were grouped together. Herbaceous and Alpine plants were alternated with the shrubs, so that the whole picture was full of life and colour. Nothing is more inartistic than masses and masses of uniform plants which prove the wealth of the owner, but not his good taste. In the rock-garden of South Lodge everything is healthy and well grown. I saw there the best of the Alpine plants,



FIG. 12.—CATTLEYA WARSCEWICZII ALBA.

former occasions it has been my privilege to be taken there by a friend in a carriage or motor-car. This time I tried to go by myself, and I now believe that it is easier to reach the top of the Matterhorn than the gardens of the Royal Horticultural Society. After half-a-day's exploration, I arrived there about one o'clock on a bicycle which I had hired at Horsley village after many hours walk and inquiries.

Wisley has been much developed lately. The rockery is a good one, although wrongly situated, judged from an æsthetic point of view, it being near the glasshouses. The climate is exceedingly good and plants in the woods grow luxuriantly. The birds singing in the trees, the flowers gleaming, and the sun shining upon everything; I had a very good impression of the work done by the R.H.S.

In a pretty little garden at Langhurst, near Warnham, I saw some beautiful *Romneya Coulteri*, Oriental Poppies and other good herbaceous plants grown much better there than anywhere else I have seen; the soil is said to be very bad, but the climate is capital for this kind of thing. In a small rockery I found Alpine *Anemones* flourishing as they do in the Alps.

together with plants of every part of the world. *Myosotidium nobile* was beautiful near the orange-coloured *Lithospermum canescens*, the ideal and superb Chilean *Crinodendron Hookeri* hanging its deep-red flowers upon a carpet of *Linnaea borealis*, and the rare *Rhododendron kantschaticum*, near *Grevillea alpestris*. The *Ramondias* were particularly good, and also the blue *Meconopsis*. Terrestrial Orchids were very fine, the best, perhaps, I saw in England after those of Sir Frank Crisp at Friar Park.

Leonardslee, just opposite to South Lodge, is such a big place that it is rather a country than a garden. Well known by everybody who loves flowers, that marvellous park may be described as quarter a botanic garden, quarter a zoological garden, quarter an artistic picture, and quarter a wild wood or garden. Here, *Solanum crispum* is a tree, and the *Camellias*, the *Azaleas* and *Rhododendrons* are so big that they form a wood, and one can walk in their shade. A natural valley has been transformed by the artist-owner of this into an Eden covering something like 100 acres of land with three lakes sleeping in its hollows. These lakes are adorned by the gigantic forms of *Gunnera manicata*, sneltering

the smallest of the genus, *Gunnera Monroia*. There the *Caltha polypetala*, the first introduced into England, covers the stretch of water, mixing its beautiful, yellow flowers with those of the blue *Myosotis palustris*.

Sir Edmund Loder, who, like myself, is an enthusiast, showed me the enormous flower of a white-flowering *Rhododendron* which he has raised and nursed for eight years. The flowers have two lobes more than is usual in *Rhododendrons*. He may well be proud of his collection.

The visitor must not be astonished if in the garden he meets some curious animals rambling strangely, with their young in their pocket, and leaping curiously over the ground, for Kangaroos (big and small) are at home in the garden, as well as many kinds of tortoises and colonies of beavers, etc., in the park.

The rock-garden, one of the best in England, interested me very much. It includes many rare things, amongst which I remarked the beautiful Chilean *Philesia buxifolia* flowering near a patch

tune's Yellow Rose which was brought to Mr. Rodgers's grandfather by Fortune himself; and here also is probably the first introduced *Chamaerops Fortunei*, a tree more than 50 years old and about 35 feet high and beautifully shaped. Sheltered from north winds by a limestone hill, the garden is altogether charming. A terrace in front of the house reminds me of the terraces of Italian Villas, and is framed by beautiful trees, shrubs and climbers (*Arbutus*, *Cypresses*, *Taxus adpressa* 15 feet in height, &c.). A rock-garden has been built lately which is enframed in the most beautiful site that could be imagined. The great *Rhododendrons*, *Tree Ericas*, and *Crinodendrons* are famous.

Near to this beautiful place at Beech Mount, Sevenoaks, is an avenue of *Araucaria imbricata*. I dare not say that it is an artistic marvel; I shall not be accused of exaggeration if I say that it is a natural one, and that there are few things more picturesque and original. *Henry Correvon, Geneva.*



FIG. 13. —CATTLEYA MENDELII "STUART LOW."

(See p. 34.)

of big *Ramondias*. The garden contains a *Creeping Spruce*—a real beauty.

But the best features of this place are the *Roses*, which grow 20 to 30 feet high between the trees and climbing over the branches, fall as beautiful flowering arches of every colour and shape. I never saw such a beautiful effect anywhere else, and wondered very much that under the much derided English climate *Roses* can do rather better than at Cannes or Mentone.

Now I must say a word of the beautiful trees (*Beeches*) of St. Clere, near Kemsing, and of the little, much too little, wall garden there, where the *Phyteumas*, the rarest *Campanulas*, the *Rock Primroses*, *Geranium argenteum*, and others are doing their best.

Near to Sevenoaks, in a site reminding one of Switzerland, there is an old beautiful garden, the work of three generations of gardeners. I mean that fine place called River Hill, where the house is sheltered by the most luxuriant *Conifers* and *Palms*. Here is the first introduced plant of *Cedrus Deodara*, the first introduced plant of For-

absolute in their determination of a particular flora. Elevation and aspect also count. We recollect a year or two ago seeing, late in August, in the upper regions of the Lotchen-thal, a small hollow still blocked with the avalanche-snow that had fallen months before, and, at the foot of the melting mass, *Soldanella* was blooming along with many other spring flowers, which elsewhere were only to be found, if at all, at far higher altitudes at that time of year.

We think some of the writing about the risks attendant on gathering Alpine flowers (pp. 89 and 90) might profitably have been replaced by a few sensible remarks on the nature of the risks and the common-sense precautions which so many tourists so ignorantly neglect. The number of so-called "Alpine Accidents" is preposterously large, but they are due generally to sheer stupidity. It is worse than absurd to see many of our own countrymen, and especially countrywomen, pottering about on the grass of steep hillsides in boots which put a heavy premium on a slip that may easily end in disaster.

But Mr. Fleming has written a tolerably pleasant book for an idle hour. We think that he has himself expressed his purpose with sufficient aptness in the sentence: "We are out for a little mild botany, not for cloudy philosophy."

M. Correvon, the well-known Swiss botanist, contributes the preface, and the publishers have done their share in presenting the work in an attractive form.

LILIES AT HOLLAND PARK.

A GREAT number of species and varieties of *Lilium* were represented at the recent exhibition at Holland Park. Large masses of a few kinds were less numerous than usual, but, taken altogether, the show of Lilies must be looked upon as satisfactory, considering that the season is not a specially good one.

Perhaps the most attractive feature among Lilies, though by no means the most imposing, was a group of the new *Lilium tenuifolium* "Golden Gleam" in Messrs. Wallace's group. This Lily, variously described as a hybrid from *L. tenuifolium*, and a selected seedling therefrom, is certainly very pretty, and should become a general favourite. It has, both in foliage and in flower, the lightness and grace of *L. tenuifolium* itself, but the flowers are, according to the description, of a pure golden-yellow colour, though in the tent and under somewhat dull conditions of weather they appeared to have a suffusion of apricot.

Lilium parviflorum, a comparatively new and decidedly rare species, was also represented in the same collection. This species is a native of the Sierra Nevada Mountains of Northern and Central California, that is from much the same region as the typical *L. Humboldtii*. In general appearance, *L. parviflorum* may be likened to *L. parvum*, except that the segments of the flowers are revolute, as in *L. pardalinum*. In common with several North American Lilies, the flowers of *L. parviflorum* vary in colour; as shown, they are of a warm apricot-yellow, with dark-coloured spots towards the lower part of the segments. The sub-genus *Martagon*, to which belong both of the plants already named, was also represented by many other species.

Lilium canadense in a cut state is a delightful subject for the furnishing of medium-sized vases. The small, partially-reflexed flowers are so delicately poised on slender, yet firm stems that they are seen to very great advantage. Both the yellow and the red forms are very pretty, while the newer *Lilium Grayi*, with deep-coloured blossoms, is nearly related to it.

Lilium Dalhansonii, a hybrid between the dark-coloured form of *L. Martagon*, known by the varietal name of *dalmaticum*, and the Japanese *L. Hansonii*, was also shown well. It is a distinct Lily, the colour of its parents being blended in a peculiar manner in the flower.

Lilium Hansonii itself was represented in a

NOTICES OF BOOKS.

ALPINE FLOWERS AND GARDENS.*

THIS book is fittingly described by the title. The paintings are well reproduced, and some are very charming—so much so that we are tempted to ask to see the originals, which a slip inserted in the volume states are on sale at the publishers. The characters of the flowers, as they occur in a Swiss meadow, are given with really remarkable fidelity, and awaken pleasing recollections of walks in the Alps and the wooded slopes girdling the mountain sides.

The letterpress, however, we confess strikes us as "thin." There is not much that the student of the Alpine flora will glean from these pages. They may, nevertheless, be useful to visitors who wish to know what sort of plants they are likely to meet at different seasons. The author, however, does indicate the fact that the seasons in the Alps are relative rather than

* *Alpine Flowers and Gardens*, painted and described by G. Fleming. (A. and C. Black.)

great many stands. It proves very amenable to cultivation in this country, and is both distinct and pretty. The flowers, which are borne in a terminal, deltoid raceme, do not reflex to the same extent as in the true Martagon, while the segments are of an unusually thick, wax-like texture. The colour is yellow, with dark spots.

Lilium Marhan (see fig. 14) is another hybrid Lily, between the white variety of *L. Martagon* and *L. Hansonii*. As might be expected from the tint of the Martagon employed in its production, this hybrid Lily is altogether lighter in colour than *L. Dalhansonii* previously mentioned. The finest form of *L. Marhan*, known as *Ellen Willmott*, was also noted in good condition.

Lilium Martagon showed great variation in colour, while some forms of the white variety (album) were greatly superior to others.

Lilium monadelphum and its variety *Szovitzianum* (see fig. 15) are beautiful Lilies, particularly in the open ground or in the lofty exhibition tent, but in a confined place their heavy perfume is too pronounced to be pleasant. This latter remark applies with equal force to several other members of the sub-genus Martagon, including the species from whence it takes its name.

Lilium pardalinum, the Panther Lily of North America, has curious rhizomatous bulbs, which delight in an open vegetable compost and a fair amount of moisture. These conditions prevail in Rhododendron beds, hence it is one of the most satisfactory Lilies for associating with those shrubs. Not only the typical kind, but the deeper coloured form known as *Michauxii* was also shown.

Lilium pomponium, that deep-red Lily for which a poor, dull-coloured flower sometimes does duty, is a striking species. The suffix *verum* is frequently applied to the best form. This Lily needs to be planted in good, loamy soil and then allowed to remain undisturbed.

Lilium testaceum, sometimes called *L. excelsum*, is, from the nankeen tint of its blossoms, quite distinct from any other species. It is one of the best for the open ground, where it will flower well the first season after planting. It also succeeds in pots, and the perfume is not too powerful to prevent its use in a cut state indoors.

Among the representatives of sections other than the Martagon group, may be mentioned *L. longiflorum*, which is probably the most popular Lily. The splendid flowers produced by Japanese bulbs and the good varieties now received from Japan are very apparent to one who, like myself, remembers the early days when the supplies of this Lily were drawn almost entirely from Holland.

L. speciosum, which rivals *L. longiflorum* in popularity, was represented by both white and coloured varieties. These two Lilies have proved to be the best of all for retarding, for which purpose many of the large consignments sent from Japan are eagerly bought up. So generally are these two Lilies grown by those who supply Covent Garden market that flowers are now obtainable throughout the entire year.

Lilium auratum is always a striking Lily, but it is decidedly erratic in its behaviour. In one or two instances, it was particularly well shown at Holland Park, and in Messrs. Wallace's group that noble variety *platyphyllum* was very conspicuous.

Lilium Brownii, whose long ivory-white trumpets are tinged outside with chocolate, is a noble Lily; while *L. candidum* (the Madonna Lily), a universal favourite, stood out boldly in many exhibits. The tall-growing *L. Henryi*, which does so well in many gardens, was also noted. Of the upright-flowered Lilies corresponding with the subgenus *Isolirion* of Mr. Baker, both *L. davuricum* or *dahuricum* and *L. elegans* or *Thunbergianum*, and several varieties were freely represented.

Lilium croceum, noted here and there, seems to be much less common than formerly; I have seen instances where a poor form of *L. davuricum* has

been supplied for it. This is a pity, for *L. croceum* (the old Orange Lily) is one of the most beautiful of border plants, while the individual flowers remain fresh and bright for a longer period than those of most of its immediate relatives, except the decidedly uncommon *L. bulbiferum*.

The last Lily to mention, but by no means the least important, is the Himalayan *L. giganteum*, of which a few fine examples were shown. The large, heart-shaped, shining green leaves of this Lily are very handsome, while the tall shaft-like stem, furnished towards its upper part with long, tubular blossoms, causes it in every way to stand out from all other Lilies. To obtain its full development this Lily needs to be grown on in the spot in which it is to flower. It is a great mistake to plant large bulbs obtained at a high price, as they flower before they become established and are seldom satisfactory.

I ought to add that it is quite possible that I have overlooked some other Lilies worthy of mention, though I endeavoured to see them all. W.



FIG. 14.—LILium x MARHAN: *L. MARTAGON*, WHITE VAR., x *L. HANSONII*.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

PANSIES AND VIOLAS.—With reference to the paper by Mr. Cuthbertson which appeared on p. 9 in your issue of July 2, I may say that 12 months ago I had Pansies planted here in comparative shade, yet where they had the full benefit of the morning sun, but the results were most disheartening. From these plants I had cuttings taken in October and placed in boxes in a cold frame for want of room elsewhere. In January these boxes had to take refuge under an Apple tree. However, in March I decided to give my young plants a fresh start, choosing a very dry border with a south aspect, where the sun has full power all day. The quantity and quality of flowers which I have gathered from

these are sufficient for me to advise all who admire the beautiful Pansy, both in vases and on borders, to grow them as above in full sunshine on a warm border free from shade. Referring to the Viola, I had cuttings also taken in October and put on a warm border, of many sorts, all of which stood the winter without the loss of even a cutting. Now Mr. Cuthbertson does not mention the best one of the lot, and that is Kitty Bell. These cuttings were transplanted in March around standard Roses, in ground which was prepared with a mixture of turf manure from an old Mushroom bed, and a liberal supply of Thompson's plant manure. All these 20 beds are planted with Kitty Bell, and it is called the prettiest spot in the garden by all who see it. I enclose a few blooms for inspection by the Editors. *M. Brennan, Head Gardener, Acton Park, Wrexham.* [This Viola is of a very delightful shade of blue. The best aspect for Violas in one district may not be so in another locality.—Eds.]

THE EFFECTS OF THE WINTER 1909-1910.

—Several interesting lists have lately appeared dealing with the effects of the late severe winter on plants in various districts: one of the most instructive being that of Mr. Bean, in the *Kew Bulletin*, but there is this difference between the English and Scotch lists that the former country escaped the severe November frosts that wrought havoc on the north side of the Border. Your correspondent, in last week's *Gardeners' Chronicle*, in Northumberland, writes indeed in formâ pauperis, and lest it should be considered typical of the East Coast, perhaps you may be able to find space for the following list. It has several points of interest, but I may draw attention particularly to *Paulownia*, which usually has the shoots injured, but which this winter escaped uninjured though planted under varying conditions. *Actinidia Kolomicta* is flowering profusely, and Professor Bayley Balfour informs me that he has not previously seen it flowering in the open in Scotland. The following list will, I think, compare favourably with that of my friend Sir Herbert Maxwell from the West Coast of Scotland: It is by no means exhaustive, simply including those plants noticed in a walk round the grounds:—

KILLED OUTRIGHT.

<i>Cotoneaster angustifolia</i> (a few plants alive).	<i>Veronica</i> (several bushy species).
<i>Olearia stellulata</i> .	<i>Escallonia pterocladon</i> .
<i>Hebecladus diosmitifolia</i> .	<i>Oreodaphne californicum</i> .
<i>Rhynchospermum jasmuinoides</i> (wall).	<i>Dracena indivisa</i> (nearly all).
<i>Phoranthus megapotaemicus</i> (wall).	Bamboos (some specimens of several species).

KILLED TO GROUND BUT STILL ALIVE.

<i>Griselinia littoralis</i> .	<i>Ceanothus dentatus</i> .
<i>Olearia Hastii</i> (all large plants; small in nursery untouched).	<i>Veronica Knuthii</i> (some).
<i>Olearia nitida</i> .	<i>Abutilon trifolium</i> .
<i>Myrtle</i> (protected by branches during winter).	<i>Veronica parviflora</i> .
<i>Escallonia macrantha</i> (for the most part).	<i>Veronica salicifolia</i> .
	<i>Bigelovia viscidiflora</i> .
	<i>Eucalyptus umera</i> var. <i>Whittinghamensis</i> .

ON WALLS KILLED TO GROUND.

<i>Pasiflora Constance Elliot</i> .	<i>Senecio elegansifolius</i> .
<i>Jasminum primulinum</i> .	<i>Bridgesia spicata</i> .
<i>Jasminum revolutum</i> .	

DAMAGED IN OPEN GROUND.

<i>Phoridium tenax</i> and varieties.	<i>Escallonia macrantha</i> (most).
Bamboos various, including aneops.	<i>Stauntonia hexaphylla</i> (wall).
<i>Rosa bracteata</i> (on wall).	<i>Cesalpinia sepiaria</i> (wall).
<i>Rosa</i> (many climbers).	<i>Banksia Rose</i> (white, on wall).

NOT INJURED.

<i>Daphniphyllum glaucescens</i> .	<i>Olearia nummularifolia</i> .
<i>Philasia decora</i> var. <i>Vilmoriana</i> .	<i>Buddleia variabilis</i> , <i>B. Homoleysana</i> , <i>B. Veitchiana</i> , <i>B. globosa</i> , and <i>B. Cudlei</i> .
<i>Tree Paeonies</i> .	<i>Rhododendron himalaicum</i> (eight or ten species).
<i>Paulownia imperialis</i> .	<i>Anackandii</i> flowered splendidly.
<i>Ceanothus Gloire de Versailles</i> (wall).	<i>Parrotia persica</i> .
<i>Eriobotrya japonica</i> (wall).	<i>Siphocampylus tetraltera</i> .
<i>Atriplex canescens</i> .	<i>Berlous cuneata</i> .
<i>Vitis Rotundifolia</i> (wall).	<i>Chamaecyparis australis</i> .
<i>Vitis Cuneata</i> (wall).	<i>Camellias</i> .
<i>Vitis Veitchii</i> and others (wall).	<i>Pinus Ayacahuite</i> .
<i>Eccremocarpus</i> .	<i>Abies Mariesii</i> .
<i>Decasneae Fargesii</i> .	<i>Cupressus Macnabiana</i> .
<i>Escallonia lanuginosa</i> .	<i>Cupressus Benthamii</i> .
<i>Carpenteria californica</i> (near wall).	<i>Arbutus cuneata</i> .
<i>Actinidia Kolomicta</i> (wall).	<i>Dactyloctenium aegyptium</i> .
<i>Choraea tetraltera</i> .	<i>Azara microphylla</i> .
<i>Carara himalaica</i> .	<i>Arbutus Menziesii</i> .
<i>Abelia</i> (two species).	
<i>Limonia tripetala</i> .	

Archibald Buchan-Hepburn, Smeaton, East Lothian

THE LABOUR PROBLEM.—The remarks in your last issue under this heading seem to call for some reply by those immediately interested. It is easy to criticise the fit of a boot, but only the man who wears it is fully qualified to give a reliable opinion as to its merits. The writer seems to take it for granted that either short-sighted policy or native meanness are the only reasons that prevent a higher rate of remuneration for nursery employés. Neither of these is the case. The very nature of the nursery busi-

ness demands the closest supervision of every detail, which induces more intimate personal intercourse and friendly relations than exist in almost any other trade between employer and employed, and nurserymen generally would be only too pleased to give their staff a higher remuneration if only the conditions of the trade would allow it. What, however, are the circumstances? For the last twenty years there has been a

steady decline in the prices of nursery stock, and an equally marked rise in the expenses of production. We have a catalogue published by our firm 100 years ago, when wages were 2s. per day and half the taxes now levied had not been thought of, and the prices in almost every instance are markedly higher than at the present time, but the most serious decline has been within the period above-named. The market grower is no happier; Grapes at 6d. during most of the season, and a serious percentage of his

assessment committees always assess nursery land at double or treble its value. This is neither law or justice, but one has to pay or fight a powerful authority with a bottomless purse. Add to these things that now nearly every branch of the trade is cut up by foreign competition. German nurserymen are flooding the country with forest trees, Frenchmen with Roses; the Dutchman dump their surplus shrubs (after their American orders are filled) at auctions all down the East Coast and everywhere else where there is water-carriage; the bulb trade is cut up by auction sales and direct offers by the lower class dealers and growers; Belgian Grapes are offered at 1s. a pound in Christmas week—but the catalogue grows wearisome. In spite of all this, the position of the nursery hand compares pretty favourably with that of the gardener. Our labourers, though nominally earning 18s., average 23s. the year through by piece-work, with Saturday half-holiday from May to September, and no responsibility; skilled men in proportion, and this in the country, with rent at 2s. 6d. to 3s. 6d. However, we shall welcome the prospect of improving matters when the public realises its obligation to help the home producer instead of taxing him to extinction to enable his foreign rivals to flourish more abundantly. *Chas. E. Pearson, Lowdham.*

—I was pleased to see the article on this subject on p. 6. It is a subject that deserves to be discussed in our gardening papers, for any suggestions that will tend to promote the mutual interests of capital and labour are surely worth the attention of both employer and employé. It would appear to me that no one can deny the truth and justice of your remarks, and, if employers would only act upon the suggestions put forward in your article, it would create a far better feeling amongst employés in general than exists in so many instances at the present time. Is it to be wondered at that men lose interest in their work when they are so badly paid? I myself have had over 30 years experience, both in large private establishments, and in some of the leading nurseries, and, although in the prime of life, I have not been able to obtain more than 18s. per week for several years past. For these last 18 months I have been engaged in making a kitchen garden and laying-out the grounds of a new grammar-school here at Newark. This is skilled work, and I get no more than 18s. per week, and I have to lose the time in bad weather when I cannot work. When there are so many cases like this, can anyone be surprised at the younger men leaving gardening and engaging in other occupations where the hours are shorter and the wages higher? I have heard more than one employer make the remark that he thought gardeners were deteriorating, but is it to be wondered at when there is so little encouragement given them to make greater efforts or take more interest in their work? *Geo. Stevenson.*

ALPINE FLOWER PICTURES.—Some interesting water-colour drawings of Alpine flowers and gardens and general Alpine views, by George Flemwell, are now on exhibition at the Baillie Gallery, Bond Street. Twenty of these pictures have been reproduced in the artist's book on *Alpine Flowers and Gardens* (see p. 35). Among the others may be mentioned No. 26, a large drawing of *Gentiana Kochiana* and *Anemone sulphurea* on the Col de la Forclaz. The snow-covered Col de Balme in the distance and the clouds are as good as the flowers are brilliant and natural, but the grass is just a little crude. A fellow to this is "Hayfields in Flower at the Col de la Forclaz," in which the mauve effect of extensive masses of *Geranium sylvaticum* is more beautiful than the mountains and sky, which are somewhat hard. It must be remembered, however, that most of these drawings have been done for the express purpose of illustrating a book, though it is very likely that both originals and reproductions would be still better had the former been executed in pure water-colour, and not in "body-colour." I have not seen any paintings of Alpine flowers and fungi so brilliant in colour and accurate in form as those of Mr. Flemwell which I was privileged to see in Switzerland. In No. 28, another exquisite picture of those unrivalled Alpine "Hayfields," the delineation and massing of the minute flowers is so accurate that it is easy to distinguish the Rampions from the Campanulas, and to pick out the Pinks and Orchids, the Globe-flowers and the



(Photograph by T. Ernest Waltham.)

FIG. 15.—LILIUM MONADELPHUM SZOVITZIANUM.

flowers going to the dust-cart at the present time are not encouraging. On the other hand, the local rates and taxes rise year by year, and are now in many places double what they were a few years ago. Then, too, the new land taxes will hit the nursery trade harder than any other section of land-owners, owing to their premises being usually situated in suburban districts. These hardships are accentuated by the fact that

ness demands the closest supervision of every detail, which induces more intimate personal intercourse and friendly relations than exist in almost any other trade between employer and employed, and nurserymen generally would be only too pleased to give their staff a higher remuneration if only the conditions of the trade would allow it. What, however, are the circumstances? For the last twenty years there has been a

Daisies. The subject reminds one of MacWhirter's well-known "June in the Austrian Tyrol," but Flemwell has gone one better in the portrayal of a far more complex mass of blossom in the foreground than the Daisies and Campanulas of the Tyrolean meadow. The picture of "Saxifrage and Alpine Eglantine, with the Glacier des Grands," should give landscape gardeners an excellent idea of rock formation, and the way in which Saxifraga aizoon, Saponaria ocymoides, and other plants establish themselves on the ledges of rock; while Rosa alpina is shown hugging the very same rocks, for it is always in such places that its blossoms are of the deepest colour. Perhaps the best picture in the show is "Thistles, the Apollo Butterfly, and the Aiguille du Tour." Here the slightly-opaque medium has not destroyed the true atmospheric effect, and the result is a veritable gem. The lemon-yellow patches in the drawing are Anthyllis vulneraria, which, in that district and nearer Chamonix, transforms acres of the mountain-side into sheets of gold in August. An extremely delicate drawing is of Anemone alpina on the summit of the Rochers de Naye, overlooking the Lake of Geneva and the mountains of Savoy. There are several pictures of the Linnaea Garden at Bourg St. Pierre; the Rambertia Garden on the Rochers de Naye, and the Thomasia above Bex also figure, and in these the natural rock-work is much in evidence. "Crocus and Soldanella at Le Plaus" indicates in a very clever manner the way in which these delicate flowers carpet the still brown sward from which the snow has only just melted. Other very beautiful spring scenes depict Hepatica in the woods at Bex, Gentiana verna and the Glacier de Plau Nève, and Primula farinosa, Oxlips, and Marsh Marigolds at Les Plaus, with the Argentine peak behind, looking at this early season so much like the Matterhorn as seen from Zermatt. These and other April scenes should do much to tempt lovers of Alpine plants to visit their native haunts three months earlier than the average rush of tourists takes place. *H. S. Thompson.*

VERONICA × EDINENSIS.—I send you herewith specimens, in flower, of an interesting hybrid Veronica, which has flowered this month for the first time. It is the result of a cross raised in July, 1901, from *V. Hecatori* ♀ and *V. pimeleoides* ♂. I purpose calling it *V. edinensis*. *R. Lindsay.*

THE RURAL EDUCATION CONFERENCE.—I have read the very long list of names (see p. 7) of persons appointed to form the Rural Education Conference, and have been surprised to find that it does not include one single person who can claim to represent practical gardening. It may be that the President of the Board of Agriculture holds gardening as a subject of rural education in small esteem, but having regard to the widespread instruction in gardening now given in elementary schools, some respect for that vocation might have been looked for from the Education Department. In these days of small holdings which, to be successful, must be cultivated as gardens, of cottage gardens and allotments, and school gardening, it is folly to ignore gardening. Really, it is one of the most important and valued forms of rural instruction. Of course, I mean practical horticulture and not experimental gardening of a quasi-scientific character. In rural districts to-day there is no greater need than for a wide expansion of gardening. *A. D.*

ORIGIN OF THE DOUBLE PRIMROSE.—I note that you inform a correspondent that experiments are now in progress to determine the origin of the Polyanthus. It is most probable that they will show that the florists' gold-laced strain, and the now widely-grown and larger-flowered border Polyanthus had diverse origins, as they are very distinct. Of greater interest, from a floral point of view, as doubtless also from a purely botanical one, would be an inquiry as to the origin of the race of double garden Primroses with which we are so familiar, and of which we still have some 10 or 12 distinct varieties. The best known are the double white, mauve-purple, sulphur-salmon, and crimson, none of which produce seed, or can be so increased, and hence, unlike the Polyanthus, show no form of reversion in their progeny. That they all originated from single Primroses appears probable; indeed, I

have seen cases in which both the white and the mauve have reverted to single form and so remained, no higher culture affecting them to reproduce doubling. I used to grow perfectly true garden Primroses of many bright and beautiful colours, and raised fresh batches of them from seed year by year, but not a flower ever showed evidence of doubling. I believe practically every one of the doubles in commerce came to us from the Continent. In any case, I know of no record of their origin here. These doubles, because they cannot be reproduced from seed, lack the accommodating constitution of the single-garden Primrose or of the wild ones, although they will thrive well in cool, moist districts, especially in Ireland. In the South of England they are very difficult to keep alive even during summer. Some 40 years ago I met with a very beautiful single, crimson Primrose in a garden at Shirley, near Southampton. It was found there and there alone. It was put into commerce as *Primula auriculæflora*, and was really a large pin-eyed, single lilac-coloured Primrose. I got from that cross the parent of the fine race of garden Primroses that were once so beautiful at Bedford. I believe that single crimson variety was the old double crimson in a state of reversion to its normal condition. However, the subject opens a wide and very interesting field of inquiry. *A. Dean.*

BOURNEMOUTH PARKS AND GARDENS.—Bournemouth is 100 years old, and, like most centenarians, is proud of the fact. No pains have been spared to let all the world know that Bournemouth is having a birthday, and it is being celebrated—July 6 to 16—in a fashion worthy of so delightful a watering place. Nothing has contributed to the rapid growth and charm of the town so much as its beautifully-kept parks and gardens. In the month of May, Bournemouth is at its best, and the Rhododendrons in Branksome Chine, Meyrick Park and elsewhere are in themselves well worth a visit. But even in April some of the earlier kinds are in full bloom. The peaty, sandy soil of the district suits the Rhododendron remarkably well, so that it is naturalized in most of the plantations, growing well with Portugal Laurel, Scotch and other Pines, Silver Birch, Evergreen Oaks, Gorse, Broom, Heather and occasional Fir trees (*Abies*), which together go to form a landscape typical of the district. The Scotch Pine (*Pinus sylvestris*) is probably native at Branksome, in Talbot Woods, etc., but *P. pinaster*, Ait. = *P. maritima* Lam. was introduced in 1805, and is now locally abundant and self-propagating. It was introduced to occupy the barren heath-land between Poole and Christchurch, which had proved too dry for *P. sylvestris*. When new gardens are made, the soil is often trenched two spits deep and well limed, while basic slag forms a useful fertiliser for many plants, especially for Narcissi. The climate of Bournemouth in winter and spring is no warmer than that of most places in the south of England, and occasionally there are very low temperatures, though there is an abundance of sunshine. The beauty of the Bournemouth and Boscombe Public Gardens is well known, and, although neatly kept and well supplied with flower-beds, their natural beauty has been so well maintained, and, indeed, improved, that all the year round there is something charming about them. It is unfortunate that the same cannot be said of certain modern "improvements" on both the East and West Cliff, where the everlasting terracing and building of new houses is rapidly spoiling the charm of the place. It must, however, be confessed that many of the Bournemouth houses have been designed by architects who are artists. The cottage in the Boscombe Public Gardens is an example of a picturesque building, delightful in its simplicity. It is occupied by Mr. Stephenson, the Superintendent of the Public Parks and Gardens. In the Central Gardens, which fill the narrow, sheltered valley of the little river Bourne, an improvement might be made by planting water-plants by the side of some of the higher reaches of the stream. Nearer the square, although the scene is pretty with gaily-coloured shrubs, well-laid-out flower-beds, and lawns bedecked in spring with Daffodils, yet, by an increase and careful adaptation of the stones already by the waterside, a very beautiful rock-garden might be made right in the centre of the town, in the small, sloping enclosure, lined with choice Rhododendrons

and Azaleas, at present closed to the public. In planting such a rockery with Alpine and other plants, it should not be forgotten how frequently in winter this narrow valley harbours damp, cold mists, which would probably kill certain species of Alpines, though many of the hardier kinds should do well there. The adjoining town of Poole, which had an interesting and stirring history centuries before the first house in Bournemouth was built, has a large public park, of which the ancient borough may well be proud. It comprises a huge salt-water lake and a smaller area of fresh water, planted with tall Bamboos and other plants, which give shelter to swans and smaller water-fowl. *H. S. T.*

IRIS TINGITANA.—Has Mr. Fitzherbert told us the whole secret of growing this Iris (see p. 17)? I followed his instructions in 1907, and was rewarded by 11 blooms from 12 bulbs. Then my troubles began, for the bulbs, after flowering, broke up into innumerable small bulblets, very much after the fashion of *Lilium giganteum*. These bulblets have, apparently, to be nursed on for years before they reach flowering size, so that I have ceased to wonder at Mr. Irwin Lynch's suggestion that they are hardly worth the trouble of cultivation. Of their beauty there can be little doubt. *Basil Levett, Wychnor Park, Burton-on-Trent.*

THE NATIONAL VEGETABLE SOCIETY'S CABBAGE TRIALS.—When the committee of this Society undertook to conduct trials of autumn-sown Cabbages last year, no intention was expressed to revise seedsmen's nomenclature. If any seedsman having a stock, say, of Ellam's Early, or of any other variety, makes selections from it which improve the stock, such seedsman is entitled to name it their selection, or to give it, if so pleased, some other name to differentiate the selection from the original stock. It is of far less importance what name a stock or strain may have than that it should be shown to be a good one for its purpose. The object in view was to ascertain which varieties or selections gave, from sowings made on July 30, the earliest and best hearts for spring cutting. That was done so far that so many as 11 diversely-named varieties were so good that they were specially recommended. Not a few others were found good for later-hearting, and some few were absolutely unfit for sowing early. So far as the second sowing on September 14 gave results, they showed that very few plants, even of varieties that bolted badly from the first sowing, bolted from the second sowing, but all the plants from that sowing were more leafy and, relatively, much later in hearting than those raised from the first sowing, hence it was conclusively proved that, for supplying very early Spring Cabbages, certain varieties, sown on July 30, will beat all others. Those who want first early Spring Cabbages will be able to make their own selections from the list of good varieties published. *A. D.*

A PRIVATE ROSE SHOW.—An exhibition of a novel character took place at Finborough Hall, Suffolk, recently, in connection with a garden party on July 1. Mr. Petteward, the owner of Finborough Hall, thought that a private Rose show would give an opportunity for many of his friends to compete together in growing and exhibiting the best Roses. The expense was borne by Mr. Petteward, who had schedules printed, had a large tent erected, provided tables and cloths for table decoration, and gave the prizes—which took the nature of higher-class books on various gardening subjects, and light tools, such as an Abol syringe, secateurs, &c. On the whole, the show was successful, and the result exceeded the promoter's most sanguine expectations. There was a large number of entries, and the quality of the flowers was excellent. The judges were Major Courtney, of Bury St. Edmunds, and Mr. A. Gamlin. The prize for the finest flower in the show went to Miss Tidewell, of Bosmere, for a very fine example of the Lyon Rose, good in every way and colour splendid. The gardeners who attended the show on behalf of their employers were entertained to tea by Mr. Petteward. Not the least attractive feature in the show was a magnificent table of Sweet Peas (not for competition), staged by the gardener at Finborough Hall, from plants grown on the single-stem system on poles. There were 17 glasses of the very best varieties and two small glasses of *Lathyrus pubescens* or Lord Anson's Pea. *G.*

THE WASP PEST.—The wasp pest is likely to be felt acutely during the present season. Seldom have so many queens been seen in southern districts. In a garden close at hand, 70 were killed in a very short time. The variations in the numbers of wasps which make their appearance from year to year are extremely interesting. They are governed principally by the nature of the weather in late winter and early spring. Two years ago, wasps were remarkably rare on account of the severe storms and frosts in April, which killed many queens. There is very little to be urged in defence on the common wasp. Certainly it acts as a pollinating agent, and also, at certain seasons, is responsible for the removal of many insect pests in the larval state. I have witnessed its predations upon the larvæ of the eyed hawk moth (*Smerinthus ocellatus*), which feed on Apple foliage. As the trees were special specimens, which I was tending for purposes of observation, the descent of the wasp in this instance did not impress me very favourably, although it is obviously that such work on its part is distinctly helpful to the fruit grower. When the queens are providing food for their first batch of maggots they prey widely upon many forms of larvæ. The real trouble comes in autumn, when the broods hatch, and the wasps attack ripening fruits. I have found the use of benzoline very effective in destroying the nests. The nests are soaked with the liquid and on lighting this the flames

a few weevils before, but never in such quantities, and the mystery is, where did they come from? Some half-dozen temporary vines are grown in tubs in the centre of the same house, which has a span roof, and no trace of weevils has been seen on these, though they have been top-dressed with the same kind of soil. All the soil used for top-dressing last winter was, as a precautionary measure, charred, so there is reason to suppose the larvæ were in the old portion of the border. I have the leaflet of the Board of Agriculture, but no remedy suggested there is so good as bird-lime; in fact, one of the recommendations is decidedly wrong, that of using soot and lime together. Has anyone tried the effect of Vaporite on the larvæ of this insect? *Wm. Taylor, Bath.*

JUNE HAILSTORM IN YORKSHIRE.—I am sending you a photograph showing the result of a terrific hailstorm which visited this district on June 30 last. The storm has done incalculable damage to growing crops in the kitchen garden, and it has completely ruined the summer bedding plants; some 56 beds of Begonias, Calceolarias, Salvias, and Ivy-leaved Pelargoniums were cut to pieces, as were Roses and Sweet Peas on the borders. Amongst the vegetables, Beetroot, Celery, Onions, Lettuces, Potatoes, Peas, and Beans all presented the appearance of having been thrashed down with a birch. The fruit crops have suffered severely; there is scarcely an

included that species, as he calls them *Primula veris elatior* pallide flore in his catalogue of plants growing round Cambridge. As to what Shakespeare meant by "bold Oxlips," I do not profess to express an opinion; but the modern, popular usage of the name "Oxlip" is a good instance of the confusion which usually characterises popular names, although several dictionaries I have consulted ignore the "hybrid Oxlip" (i.e., the Cowslip *Primrose*) altogether, and recognise *P. elatior* only as entitled to the name "Oxlip." It will probably interest *B.* to know that the caulescent form of the *Primrose* shares with the above-mentioned hybrid the name of "Oxlip," but I regret I cannot at present quote references to this, nor do I know where it obtains. In parts of Essex, I understand, *elatior* is known as the Cowslip and the Paigle, both names being also applied to the Cowslip in other parts, as in Suffolk, where the Oxlip is called "Five Fingers." In other parts the Cowslip is a "Paigle," and *elatior* a "Cowslip," and, again, the hybrid Oxlip is called a Cowslip in other places. Hence, there is hopeless confusion among the popular names, and I must say that I strongly uphold the propriety of distinguishing *Primula elatior* as the "true" Oxlip, since there is no other true "Oxlip." If *B.* objects, what name would he propose for *P. elatior*? *C. Nicholson.*

The Week's Work.

THE FLOWER GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Hertfordshire.

The shrubberies.—The heavy rains experienced recently have given to the shrubberies a bedraggled appearance, and it will be necessary, when the weather permits and the ground is sufficiently dry, to overhaul them and make them tidy. The removal of decayed growths and the shortening of any that may need it will add neatness, but it must not be overdone or the effect will be formal. Remove weeds and thoroughly loosen the surface with the draw hoe, and well rake over the ground. At this season of the year, there is a less showy display of flowering shrubs, and, as I have suggested in former *Calendars*, the inclusion of some of the more robust, hardy perennials in the more open positions of the shrubberies imparts considerable brightness to the surroundings. Amongst shrubs that do flower, however, during the month of July must be mentioned the *Philadelphus* or Mock Orange, of which there are many charming varieties of great merit. Of free growth, and not at all fickle as to their requirements, these plants are well worthy of extended planting, producing as they do a profusion of white flowers, many of them sweetly scented. Especially beautiful are the hybrids that have been raised from time to time of *P. Lemoinei*, such as *Boule d'Argent*, *Conquete*, *Fantasie*, *Gerbe de Neige*, *Candelabre*, *Mont Blanc*, and *purpureo-maculatus*, a most distinct flowering shrub, the base of each petal being marked with a purple blotch. *P. coronarius*, the common species, has also several varieties of striking merit, especially the two variegated forms. *P. microphyllus*, with small leaves and flowers, the latter sweetly scented, is worthy of inclusion in every collection. Another useful genus now flowering, both as wall specimens or otherwise, are the *Escallonias*, such as *E. exoniensis*, *E. floribunda*, *E. × langleyensis* (a hybrid of garden origin and a beautiful shrub), *E. macrantha*, and *E. Phillipiana*. Two species now flowering of the Broom family are *Cytisus austriacus*, a dwarf grower, and *C. nigricans*, a profuse bloomer and quite distinct.

Antirrhinum.—*Antirrhinums* are procurable now in a great variety of distinct and beautiful colours. They are well adapted for furnishing long beds or borders, or ribbons of distinct colour. The plants may either be raised early in the same year in heat and gradually nursed along or sown now in drills in the open ground, if not already done, on a semi-shaded border, where a fine tilth of soil may be prepared. Afterwards they should be transferred to nursery beds, where they will withstand the winter. Both the tall varieties and those of the dwarf or Tom Thumb section may be had in distinct and striking colours, and may be relied upon to come perfectly, true from seed, if purchased from a good house.



FIG. 16.—JUNE HAILSTORM IN YORKSHIRE.

are such that they not only destroy those present in the nest, but also many of those returning for the night. *W. Francis Rankine, Churt, Surrey.* [An excellent method of destroying wasps is that of placing cotton wool soaked in cyanide of potassium in their burrows.—Eds.]

A PLAGUE OF WEEVILS.—A small viney measuring 24 feet by 20 feet, to which I pay periodical professional visits, is infested with weevils, of which I send you a sample. The vines were planted in a newly-made border five years ago, in July, and they did—and still are doing—remarkably well. Last year, for the first time, weevils appeared, and 232 were caught. This year there appears to be no diminution in their numbers, and about 200, so far, have been caught by the persevering gardener in charge. Now we have stopped their doing damage to the leaves of the vines by placing bird-lime on cardboard on the ground round the stems. Many are caught on the bird-lime, and still more under sheets of newspaper, where they are found in the early morning. So far, it will be seen that the difficulty as regards the part of the vine above ground is overcome; but what about the roots, on which it is understood the larvæ operate? At present, no ill-effects have been seen, except a few nibbled leaves; but possibly, were the vines in a less vigorous condition, the effects of damaged roots would be noticeable. I have seen

Apple or Pear which does not bear signs of severe bruising. Gooseberries are the same, and Strawberries were completely covered with hailstones. Chrysanthemums on the kitchen-garden paths were nearly stripped of all foliage. Not in the memory of the oldest resident has anything like it been seen before in this district at Midsummer. The photograph shows the front lawn and beds white over with the hailstones. *H. Wilson, The Gardens, Saltmarsh Hall, Howden, East Yorks.*

THE TRUE OXLIPI.—The question as to what plant is entitled to be called the "Oxlip" is not so simple as *B.* supposes (*Gard. Chron.*, vol. lvii., p. 409). In the first place, it is decidedly doubtful what was meant by the old writers he mentions. Their works are not illustrated with sufficient accuracy and completeness, and their descriptions are scarcely precise enough to render the identity of their "species" certain in all cases. Parkinson, for instance, in his *Paradise* (1656), pp. 244 and 245, describes a "single Oxelippe" and a "Cowslip Primrose," which rather upsets *B.*'s contention that, in those days, the "Oxlip" was the "Cowslip Primrose." Ray describes what he calls great Cowslips or Oxlips, and, as he lived near the true Oxlip district, in Essex, and made frequent journeys through the heart of it to Cambridge, it is probable that his great Cowslips are the true Oxlips, or, at least,

FRUITS UNDER GLASS.

By B. GOODACRE, Gardener to Sir ERNEST CASSEL, G.C.B., Moulton Paddocks, Newmarket.

Alpine and perpetual-fruiting Strawberries.

Plants in pots will require careful attention with respect to watering and feeding. Place the plants more thinly apart as growth advances in order that they may have the full benefit of light and air. When they are well rooted in the pots, feed them with liquid manure and soot water, varied by an occasional sprinkling of some good fertiliser.

Peach trees.—Ripening crops will require a warm and fairly dry atmosphere. During dull or wet weather and on cold nights, a gentle heat in the water pipes, with top and bottom ventilation, will be necessary to create a circulation of air, otherwise but little fire-heat will be used. The trees should be looked over daily for the purpose of gathering ripe fruits. This is preferable to placing nets under the trees, as the fruits are apt to be bruised by coming in contact with the net. Any leaves which obstruct the light may be tied back so that the Peaches are exposed fully.

Later Peach houses.—Attend to the watering of the borders, especially during hot, dry weather, as a few days' neglect at this stage may seriously affect the crop. The surface of the borders is not always a reliable guide to the state of the roots, as the syringings tend to make the surface soil wet and pasty. It is an excellent plan to prick up the surface occasionally with a fork so that the air may penetrate, taking particular care not to injure the roots during the operation. A mulching of short, well-decayed manure is of great assistance in keeping the surface roots in good health. Established trees may be given liquid manure and soot water.

Wall cases and unheated Peach houses.—These are useful for maintaining a supply of fruit in succession to the supply from heated houses. As these crops are largely dependent on the weather, full advantage should be taken of fine days by closing the structure early enough to retain a little sun heat. Ventilate freely whenever outdoor conditions are favourable. Syringe the trees vigorously in the afternoons of sunny days, but avoid throwing a lot of water about when dull, cold weather prevails, as such conditions favour the growth of mildew. Regulate and tie in the growths as necessary, allowing each shoot ample space on the wall or trellis. A little more space should be given than with trees in heated houses, otherwise there may be some difficulty in ripening the wood if the autumn is cold and wet. Keep a sharp look-out for thrip and other insect pests, and take prompt measures for their eradication. Mildew may be destroyed by the use of a sulphur vaporiser.

Cucumbers.—Plants which have ceased to bear freely may be replaced by young stock, which rapidly attain to a fruitful size at this season of the year. Maintain a considerable heat and a moist atmosphere, with full exposure to sunshine, although it is advisable to provide a light shade for a few days after planting. Ventilate carefully during hot weather to prevent scorching of the foliage, admitting air early in the day and increasing it as the sun gains power. Close the house at about 3 p.m. with plenty of moisture. Apply water liberally to the roots, and, when the plants are in full bearing, generous supplies of liquid manure will be of great benefit. When applying top-dressings of fresh compost see that it is first warmed to the atmosphere of the house, or the tender rootlets may be injured. Keep a sharp look-out for red spider, which spreads rapidly if unchecked. Seed may be sown now to provide a crop during the autumn months.

THE HARDY FRUIT GARDEN.

By A. R. SEARLE, Gardener to the Marquis of NORTHAMPTON, Castle Ashby, Northamptonshire.

The Loganberry and Blackberry.—The weak, basal growths of the current season should be removed from both these plants, retaining six or seven of the strongest shoots for training to the stakes or trellis according to the method of training adopted, so that they will not become twisted or broken by rough winds or by the necessary moving about amongst the plants. If early attention is given to this matter, the canes will be better exposed to the light and air, therefore they will be more likely to mature properly. When fastening them in, they should be trained

as far apart as possible, and away from the fruiting wood, so as not to shade the fruits. These two useful plants, no less than the Raspberry, are gross feeders, and require to be kept well mulched and given frequent waterings with liquid manure when the fruits are swelling. The fruiting canes should be removed immediately all the fruit has been gathered.

Fruit trees on walls.—Every attention should be given to the training of the shoots of Peaches, Plums and Apricots. Pinch all sublateral growths at the first leaf; see that the shoots are so placed that they receive as much sunlight as possible, and, at the same time, leave the fruits well exposed. Make sure that sufficient quantities of water are applied to the roots. Attend to the mulching on all fruit tree borders and renew anywhere it may be necessary. Trees that are growing in light soils and carrying heavy crops of fruit, also all trees planted in the spring, will need special attention in regard to mulching and watering during dry weather.

General work.—Now is a good time to take a look round and make a note of all fruit trees making rank growths; these will require root-pruning in the autumn, also those not growing sufficiently strongly should be noted; these will require some assistance in the shape of a good top-dressing. Continue to use the hoe frequently on all the fruit quarters, or large weeds will soon be in evidence after the recent showery weather. The rains have been most acceptable here, but sunshine is needed now for all fruit crops. Advantage should be taken of sunny weather for the gathering of any fruits for preserving, remembering that it is essential they are thoroughly dry for this purpose. Earwigs are very plentiful this season, and as they are most destructive to Apricots, traps should be set for them. The form of trap we find most useful is a 48-size pot partly filled with Hay; these are examined each morning, and the insects destroyed, either by pinching or shaking them into a vessel containing paraffin.

THE KITCHEN GARDEN.

By JOHN DUNN, Kitchen Garden Foreman, Royal Gardens, Windsor.

Celery.—The late batch of Celery should be planted without delay, and sufficient water given to settle the soil about the roots. These late plants will stand the winter better than the early plantings, through the heads may not be so large. Before any soil is applied to the plants, the bed should be examined, and, if necessary, a good soaking of water given. In earthing-up Celery great care should be taken to prevent any soil getting into the crown of the plants. Before applying the soil the plants should be cleared of all decaying leaves and the side growth; when this has been done, gather the leaves together and tie with pieces of matting or string, which should be removed after sufficient soil has been placed round the plants. It is better to apply the soil a little at a time than to cover the plants too much at once.

Winter Greens.—Proceed with the planting of all winter Greens as quickly as possible, so that by the end of July most of the winter crops will be planted. Plots which were recently occupied by early Peas may be prepared and planted with Coleworts or Turnips so that these crops may be gathered and the ground again prepared for early Potatoes in the following spring. If matters such as this are regulated now, it will be easy to find sheltered places for early crops next spring.

Winter Spinach.—A good sowing of prickly Spinach should be made now for use in late autumn, and another sowing may be made in 10 days' time for winter and early spring crops. It is better to make two or three sowings during the month than to sow a large quantity at one time. The ground for this crop should be in good condition to ensure a free growth. If it was manured for the previous crop it will require to be deeply dug and allowed to remain untouched for a few days until the surface is dry enough for treading, previous to which a good dressing of soot may be given, so that by treading and raking the bed it may become thoroughly mixed with the surface soil. When the bed has been made smooth and level, drills may be drawn at 18 inches apart and 2 inches deep. A careful watch for slugs should be kept over the plants raised this month. If by any means this crop is

destroyed, the season may be too far advanced to replace it. When the plants are large enough to be out of danger, let them be freely thinned, as plants with plenty of room will stand the winter better than if allowed to remain close together in the rows. A few rows of Spinach Beet sown now will be found useful in case of failure with the ordinary winter variety.

Cucumbers.—Seeds should be sown now to provide plants for fruiting in autumn. Sow them singly in small pots and place them in a gentle hotbed composed of stable manure and leaves. When the heat of the soil is 85° the plants may be safely planted at distances of 5 feet apart. If the temperature of the bed is inclined to rise, a few holes may be bored round each mound to allow the steam to escape. Plants fruiting freely should be given frequent watering of liquid manure, and light top-dressings of loam and farmyard manure in equal quantities may be applied as often as the young roots appear above the surface. Keep the plants freely thinned and stop the young growth at the second joint beyond the fruit. Syringe the walls frequently and the foliage twice daily on fine days, shutting up the house as early in the afternoon as possible.

Tomatoes in the open air.—The unsettled weather has been sadly against Tomato cultivation out-of-doors. The plants should be kept free from side shoots to enable the light and air to pass freely amongst the bloom. When a few trusses have been set on each plant the tops may be taken out. To encourage the development of the fruit a top-dressing of artificial manure should be given and pricked into the soil with the point of a digging fork.

PLANTS UNDER GLASS.

By JOHN DONOGHUE, Gardener to JOSEPH PICKERSGILL, Esq., Bardon Hill, Westwood, Yorkshire.

Schizanthus.—The present is a suitable time to make a sowing of *Schizanthus* in order to raise plants for spring flowering. *S. Grahamii* and *S. retusus* affording such variation in colour, and specially in shades of lilac, orange, and rose, are not only useful as pot plants, but they provide excellent flowers for cutting. *S. Wisetonensis* and *S. pinnatus* are especially suitable for the decoration of the conservatory; either in pots or in baskets for suspending they are equally charming. Care should be taken to sow the seeds thinly, as any overcrowding at the start would produce failure. When the seedlings are large enough to handle, transfer them into pots or shallow pans, and place these receptacles in a cool frame as near to the glass as convenient. As a rooting medium for the plants during their early stages of growth, a compost consisting of rich fibrous loam with a small amount of half-decayed leaf-mould prepared from Oak leaves and a moderate quantity of coarse silver sand would be suitable. If the cultivator desires large specimen plants, he should place four to six seedlings in a pot and pot them into larger pots without dividing them. If it is found that the plants fail to produce side shoots, the extreme points of the growths may be pinched whilst the plants are still young. For two or three days following repotting, the plants may be given a little shade from hot sunshine; at all other times they should be exposed fully to the sun. This is the case even during the period of flowering, for the flowers are always brighter in colour if they are kept permanently in the sunshine.

Eucharis grandiflora (amazonica).—Plants of *Eucharis* which were placed in the intermediate house after they completed their growth in spring are now showing their flower-spikes. Therefore, if it is wished that the season of flowering should be prolonged as much as possible, small batches of plants may be placed in the stove at intervals of a few weeks. It is desirable to plunge the pots up to their rims in tan or other suitable plunging material. Before removing such plants they should be immersed in a tank of tepid water, where the roots may get a thorough soaking. The foliage should be cleansed thoroughly, removing any mealy bug or insect pests by sponging the leaves with an insecticide.

Euphorbia (Poinsettia) pulcherrima.—The later batch of this species may now be transferred into their flowering pots. When the roots again become active, more ventilation should be given the plants and they should be exposed gradually to the sunshine. *E. jacquinæflora* is

also ready for its final repotting, and this species should be treated in a like manner to *E. pulcherima*, except that the temperature at night must never be allowed to fall below 55°. When the plants have filled their last pots with roots, alternate waterings with soot water and clear water may be given; also very slight top-dressing of an approved chemical fertiliser at intervals of a week or ten days. The greatest care must be exercised in the use of chemical manures, as the roots of *Euphorbia* are specially liable to injury if subjected to excessive applications.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Surrey.

Cypripedium.—Most of the warm-growing *Cypripediums*, as *C. Rothschildianum*, *C. Lathamianum*, *C. Curtisii*, *C. ciliolare*, *C. super-*

ascertain if additional rooting space is needed, remembering that they must not be allowed to remain in a pot-bound condition. Select clean, sound pots of sufficient sizes to allow of at least two seasons' growth. The pots should contain clean crocks for one-third of their depth, and the compost should consist of fibrous loam with the finer particles sifted out, *Osmunda* fibre, and *Sphagnum*-moss in equal proportions; the fibre and moss should be cut up moderately fine, for, when used in this way, it incorporates better with the loam than if used in a rough condition. Add plenty of small crocks and thoroughly mix the whole well together. Be careful not to injure the roots unnecessarily. Pot each plant with moderate firmness, but not so firm that the water cannot pass rapidly through the soil. Keep the surface of the soil just below the rim of the pot so as to make watering easy. After root-disturbance place the plants all together where they can

by piece, leaving the centre as compact as possible, and, if the plant is rooted well all round the drainage, leaving the crocks intact. Then the whole mass is placed in a large pot, keeping the base of the leaves just on a level with the rim. Fill around the roots to about half the depth of the pot with small clean crocks, and use similar compost as above advised, making it quite firm about the roots. Plants that are healthy and have room for further development should not be disturbed, but, if the compost has deteriorated, it should be allowed to become quite dry; then carefully loosen it with a small stick, and shake out as much of it as possible, replacing with fresh compost. Whatever is done in the way of repotting these plants, it should be carefully performed, as the roots of all of these species and their hybrids are very brittle and easily injured. Before water is afforded, the plants should be allowed to become



FIG. 17.—COLLECTION OF VEGETABLES EXHIBITED BY THE HON. VICARY GIBBS AT THE HOLLAND HOUSE SHOW.

(See report in issue for July 9, p. 29.)

ciliare, *C. barbatum*, *C. Stonei*, *C. Mrs. F. Wellesley*, *C. St. Albans*, *C. Maudiae*, *C. callosum* and its variety *Sanderae*, and *C. Lawrenceanum* and its variety *Hyeana*, have finished flowering for the season. The *Selenipedium* section, which includes such plants as *C. Schröderae*, *C. macrochilum*, *C. grande*, *C. Sedenii*, *C. S. cardinale*, *C. S. candidulum*, *C. leucorrhodum*, *C. calurum*, *C. Cleola*, and *C. nitidissima* are not grown very generally, the principal reason being that they have but little pecuniary value; nevertheless they help to form a collection, are easily cultivated, and all produce very pretty flowers. Such varieties as *C. macrochilum* and *C. nitidissimum* produce six or seven flowers, all open together on the same spike. After these and others of the same category have flowered, it is desirable to examine each plant in order to

be given extra shade from strong light. For several weeks afterwards, the surface of the compost should be kept just moist, and damping should be done between the pots several times each day, so that the atmosphere is kept humid. *C. Cleola* thrives best in a shady part of the intermediate house. During warm, bright weather, the plants should be given a light spraying overhead with tepid soft water. When damping overhead, care should be taken not to spray too heavily, as, if water is allowed to remain low down in the axils of the leaves, especially of some species, they are liable to decay. Plants of *C. niveum* section having passed out of bloom may also be repotted if necessary, and, in so doing, the plants should not be turned out in the ordinary way, but the pot should be broken carefully all round, taking the crocks away piece

thoroughly dry at the roots and remain so for several days, then dip the pots up to the rim in tepid rain-water, so as to ensure a thorough soaking. The plants should be allowed to become quite dry again before more water is afforded. These species, and many of their hybrids, as *C. Lawrencei*, *C. macrochilum*, *C. Chapmanii*, *C. Berkeleyi*, *C. Olenus*, *C. Arnoldiae*, *C. Gertrude Hollington*, and *C. Venus*, thrive well when elevated close up to the roof glass in the warmest house in a position where fresh air can circulate freely around them; they must be shaded at all times when the sun is likely to shine on them. Small thrips can be kept in check by a periodical use of the XL-All vaporiser or similar insecticide. When sponging the leaves, take care not to raise them too high, as the midrib is easily cracked and this injures the leaf permanently.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Special Notice to Correspondents.—The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

Letters for Publication, as well as specimens of plants for naming, should be addressed to the EDITORS, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Local News.—Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Illustrations.—The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens or of remarkable plants, flowers, trees, &c., but they cannot be responsible for loss or injury.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editors to see.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, JULY 19—

Royal Hort. Soc. Coms. meet. (Lecture at 3 p.m. by Mr. Fred. Enock on "Insects Affecting Crops.") Roy. Scottish Arboricultural Soc. Forestry Exh. at Dumfries (2 days).

WEDNESDAY, JULY 20—

Cardiff & County Hort. Soc. Sh. (2 days). Liverpool Sweet Pea and Rose Sh. (2 days).

FRIDAY, JULY 22—Handsworth Fl. Sh. (2 days).

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich—63.2°.

ACTUAL TEMPERATURES.—

LONDON.—Wednesday, July 13 (6 P.M.): Max. 71°; Min. 53°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, July 14 (10 A.M.): Bar. 30.2; Temp. 63°; Weather—Bright.

PROVINCES.—Wednesday, July 13; Max. 74° Bath; Min. 55° Malin Head.

The Development of Sweet Peas. During the past quarter of a century, floriculture has developed ideals very different from those which guided the work of the older florists. The precision of form and marking which they regarded with so much enthusiasm is no longer considered of paramount importance. Thus, the old Show Pansy, the Show Dahlia, the Laced Pink, the stage Carnation, the Ranunculus, the Show Tulip, the Gold-laced Polyanthus, and the hooded-flowered Sweet Pea are now seldom seen? Certainly they are not abandoned, for some of them are still lovingly grown by old enthusiasts, though some are in process of being driven out by new-comers, and we see the operation going on under our eyes, especially in the cases of Dahlias and Sweet Peas. It would be a mistake to say that the waved form has entirely displaced the older form of Sweet Pea. The latter is still largely grown, but not by growers who count in the forward march of things. Visits to the Shows of the National Sweet Pea Society are sufficient to demonstrate that the proportion of waved to hooded flowers is as ten to one. This change has been effected in less than ten years. At the Bicentenary Sweet Pea Show at the Crystal Palace in 1900 there was not such a thing as a waved Sweet Pea. Has any flower, we wonder, ever undergone so hasty a metamorphosis?

Our present object is to consider the principal colour sections into which Sweet Peas are grouped, with a view to showing the nature of the work that still awaits raisers of new varieties.

The section having, for the moment, the greatest fascination for raisers, is the so-

called yellow and buff section, represented by Clara Curtis, a waved flower of primrose tint; James Grieve, primrose, with an upright standard; Mr. Collier, a hooded flower; and Dora Bredmore, a buff-coloured flower. It is the ambition of every raiser to obtain a yellow Sweet Pea, and in this section we find, at the present moment, the nearest approach to yellow, but it must be admitted that James Grieve, which gives the deepest tone of colour, is a long way from being a pure yellow. It is well known that in the Sweet Pea there is no such thing as yellow sap-colour, and this it is which, as it would seem, makes the outlook so hopeless. The primrose tint in all so-called yellow Sweet Peas is produced by chromoplasts. Now, unless yellow sap-colour can be introduced into the constitution of the Sweet Pea by hybridisation, it will be difficult to intensify or deepen this colour. A bolder flower than Clara Curtis, and one possessing rather better substance should be the aim of raisers working with the material at present available.

In the white-flowered section, the leading flowers are Etta Dyke, waved; Nora Unwin, less waved; and Dorothy Eckford, hooded. There is room for a waved flower of decidedly better substance than Etta Dyke—shall we say larger, of better substance and not quite so crinkled? Nora Unwin does not quite fill the bill. In some respects it is better than Etta Dyke. It never has that excess of crinkling sometimes characteristic of Etta Dyke, which spells confusion in a bunch; but, being of the Unwin type, it can never have the effectiveness of a true Spencer. Possibly a cross between the two would produce a valuable variety.

Amongst pink flowers, Countess Spencer, the forerunner of the Spencer race, has many closely-allied forms. A pale form is Mrs. Hardcastle Sykes and a deeply-coloured variety is the apparently unfixable Audrey Crier. Countess Spencer on a cream instead of the original white ground develops into Constance Oliver, Mrs. Henry Bell, Mrs. Hugh Dickson, and a host of other names. There is not much room in this class for further development except to attain fixity, if that is possible, in flowers of the Audrey Crier type, one of the most beautiful forms of Sweet Pea.

In the orange shades, Helen Lewis, waved; St. George, slightly waved; and Miss Willmott, hooded, are the selections of the Sweet Pea Society. Two or three new-comers will contest with Helen Lewis the proud position of being top in the Society's election—Edrom Beauty, certificated by the N.S.P.S. last year, Earl Spencer, and Nancy Perkin. The two latter are much alike; in fact, there is not room for both. Their colour is a rich orange-salmon, which is admired universally; the same colour appeared in the old Henry Eckford, but the new-comers are waved. To make greater confusion in this colour class, we have Stirling Stent and Orange King appearing this year, both having gained an award from the R.H.S., whilst Stirling Stent was awarded a Silver Medal by the N.S.P. Society as recently as Tuesday last. There is room here for raisers to breed orange-salmon flowers, which will not bleach in the sunshine.

Of rose and carmine flowers, John Ingman and Marjorie Willis represent the best waved

forms and Prince of Wales the old type. John Ingman has probably more aliases than any other Sweet Pea. It is a bold, fine flower, and will be difficult to excel. There does not appear much opportunity for raisers here.

In the class for crimson and scarlet varieties, The King, waved; King Edward, and Queen Alexandra, both of old type, are given by the Sweet Pea Society. It is obvious that there is room for new varieties, especially as The King, the largest and representing one of the best types, does not stand strong sunshine well. Several so-called sunproof crimsons are on offer, Dobbie's Sunproof Crimson having been certified by both the R.H.S. and the N.S.P.S., but what is really wanted is a crimson of The King type which is sunproof. This, no doubt, will be attained sooner or later. A really first-class flower of the colour of Queen Alexandra is wanted. George Stark was at one time expected to satisfy this need, but there is ample room for others.

The place for lavender colour was well filled some years ago by Lady G. Hamilton (hooded), one of the most charming Sweet Peas ever raised. Now, Mrs. Chas. Foster and Frank Dolby, both waved flowers, take precedence. Mrs. Chas. Foster is an almost perfect Sweet Pea, but it has been well nigh impossible to obtain a pure stock of it. Masterpiece is a new competitor in this class, and it is said to be fixed.

There is plenty of room for good Spencer blues. It has been pointed out by Professor Bateson, and it is known to most raisers, that, up to the present, the Spencer form will not associate with Lord Nelson or Navy Blue colour, nor even with the paler, pure blue represented in Mid Blue. There are blue-waved flowers, Zephyr for example, but that is not a fine large Spencer, nor is it fixed. Kathleen McGowan and Anglian Blue have yet to be tried by the general growers. None of them appears in the N.S.P.S. Classification List. It will be interesting to get the combination, which we believe is possible between the true blue in colour and the true Spencer in form, and this is a field open to raisers. This season a variety named Mrs. George Charles has been sent out. It gives promise of being a Spencer of Navy Blue colour. The first flowers seem easily scorched, but, still, it is promising. What is wanted is a real good Spencer of Lord Nelson colour.

Dark Maroon is represented in the classification of the N.S.P. Society by two varieties, both of the old type—Black Knight and Hannah Dale. This indicates that no dark maroon, waved variety has come before the Society in its trials that has been fixed enough to obtain the Society's approval. Quite a number of darks have been sent out, but growers still wait for one they can depend upon to come true.

Of Picotee-edged flowers, Elsie Herbert, white with pink edge, and Mrs. C. W. Bredmore, cream buff with rose edge, are both excellent in their way, and both have big, waved flowers. There is scope in this class for numerous new combinations.

Striped, Fancy, and Bicolor flowers appeal to fewer cultivators, but among these sections Aurora Spencer, waved cream with rose stripes, and Mrs. Andrew Ireland, waved cream and rose bicolor, are distinct and very

beautiful. There is room for fine waved types of good substance in the classes represented by Helen Pierce, Prince Olaf, Sybil Eckford, and a few others.

We need hardly remind those who are beginning for the first time to raise new varieties that it is an operation that requires much patience and a considerable extent of ground. All seedlings must be grown on for several years before the possibilities of a cross are exhausted. The most important lesson to enforce is they must all be grown on from single plants, the produce of two plants never being mixed, however similar they may appear. With such work in prospect, raisers will be well advised to think out clearly what they desire to obtain, and, in order to give the necessary attention, it will be best to make but comparatively few and carefully-considered crosses.

OUR SUPPLEMENTARY ILLUSTRATION.—

Senecios are well represented in South Africa, but very few of the species appear to possess any great value from a cultural point of view. *S. glastifolius* belongs to a small section, in which all the species have purple flowers. Judging from collected, wild specimens, it is a somewhat variable plant with respect to both habit and size. It is found in South Africa growing on Table Mountain and eastward to Algoa Bay. The stems are suffrutescent and reach a height of 2 feet to 3 feet, with the lower leaves 3 inches to 4 inches long and toothed, and about $\frac{1}{2}$ inch wide. Higher up the stem the leaves gradually become smaller till ultimately they are like small bracts. The plant illustrated, which was sent us by Mr. Rabjohn, was raised from seeds received from Algoa Bay, and is much more free in habit than the more rigid type. There is a record of the same variety having been raised from seed in the year 1900 by Messrs. SUTTON & SONS, who received the seeds from the district of George, in South Africa. It is well adapted for cool greenhouse treatment, such as is given to *Cinerarias*, and it makes a handsome decorative plant.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Committees of this Society will take place on the 19th inst., at the Vincent Square Hall. In the afternoon a lecture on "Insects Affecting Our Crops" will be delivered by Mr. FRED ENOCK, F.L.S., F.E.S.

HORTICULTURAL CLUB.—The honorary secretary, Mr. E. T. COOK, informs us that the club excursion will take place on Thursday, the 28th inst., not 30th, as stated in the preliminary notice. By the invitation of Mr. N. N. SHERWOOD, the members will visit Prested Hall, Kelvedon, Essex. The train, to which saloon carriages will be attached, will leave Liverpool Street Station at 10.55 a.m. All applications for tickets, which are 7s. 6d. each, should be made to Mr. HARRY J. VEITCH, Royal Exotic Nursery, Chelsea, S.W., before July 20, in order that the necessary arrangements may be completed. The return train leaves Kelvedon at 7.30 p.m., arriving at Liverpool Street at 9.3 p.m., but, should any member desire to leave earlier, a train leaves Kelvedon at 4.32 p.m., reaching Liverpool Street at 5.48 p.m.

AMERICAN GLADIOLUS SOCIETY.—A Gladiolus Society was established at Boston on May 27 last. At the inaugural meeting an interesting paper was read by Mr. H. YOEUELL, of Syracuse, New York, on "The Gladiolus as we Knew and Grew It Fifty Years Ago." The communication was of especial in-

terest, as Mr. YOEUELL's father was one of the largest growers of Gladioli in England half a century ago, and was responsible for the introduction of *Gladiolus Brenchleyensis* about the year 1860. The plant was found by Mr. W. CASEY, one of Mr. YOEUELL's foremen, in a cottage garden at the village of Brenchley, in Kent, to which locality it had apparently been brought from Africa by a sailor-son of the owner. The variety became immensely popular, and between 1860 and 1864 the sales from Mr. YOEUELL's nurseries at Great Yarmouth amounted to about 300,000 corms annually. That the *Gladiolus* is a flower capable of great possibilities is obvious to all who have noticed the vast improvement in form, colour and other qualities which has been accomplished in recent years in the *Gandavensis* section alone. Much remains to be done with the *Lemoinei* and *Childsii* hybrids, as well as with other forms, and we wish the society every success in its work.

BRUSSELS BOTANIC GARDENS.—On Sunday, July 3, a fête was held to celebrate the 40th anniversary of the taking over of these Botanic Gardens by the State. The fête included a demonstration in memory of PIERRE FRANÇOIS GINESTE, who drew up the original plans for the laying-out of the gardens and the buildings which contain the valuable collections. A bronze plaque to his memory was unveiled, recording the fact and giving the dates of his birth and death—1769-1850. Originally founded by a botanical society, the Brussels Botanic Gardens are now a Government institution. The staff is comprised of the following:—Messrs. DURAND, Director; DE WILDEMAN, Keeper of the Herbarium; BOMMER, Professor of Botany; LOUIS GENTIL, Curator; and LAURENT, also connected with the Herbarium. The garden is also under a Governing Committee composed of eminent Belgian professors of botany. During the evening of the 3rd inst. the buildings and greenhouses were brilliantly illuminated with festoons of coloured electric light. A concert was given that was much applauded by the 50,000 people gathered together inside and outside the garden. M. LÉON GROSJEAN, member of the Governing Committee, gave a dinner to 40 guests, eminent in the botanical and horticultural world. The dining hall was beautifully decorated with Orchids, and speeches suitable to the occasion were made. After the dinner a choir gave a selection of songs; the band of the Guides Regiment performed some choice pieces of music, and there was a display of fireworks. Each guest found by the side of his plate an artistic souvenir, consisting of a view of the Botanic Gardens in 1830 and in 1910, and, in addition, the president, M. GROSJEAN, presented to each guest a medal commemorating the event which the occasion celebrated.

CHIEF OFFICER FOR THE LONDON COUNTY COUNCIL PARKS.—The following advertisement appeared in the *London County Council Gazette* for the 11th inst.:—"The London County Council invites applications for the appointment of chief officer of its Parks Department, who will be required to give his whole time and energies to the duties of his office. Members of the staff of the Council are not precluded from making application for the position. The person appointed will be responsible for the management of all the parks, gardens, and open spaces maintained by the Council, which at present are 114 in number, and of an aggregate area of about 5,100 acres. He will also be responsible for organising the recreative arrangements in the parks, including gymnasiums, boating, game pitches, and bands; for the management of the conservatories and the horticultural and other buildings therein, for

overlooking the refreshment facilities, and for the management and discipline of the staff employed in the parks service. The average number of staff is 1,000, including in its ranks men well qualified as specialists in their separate departments; and, while for the chief officership knowledge of surveying, landscape gardening, forestry, and horticulture is desirable, the principal requirement must always be a capacity for intelligent general supervision of the very varying duties which have to be performed under the chief officer's authority. The person appointed will not be allowed to take any private business or other paid employment, and any fees received by him, either as a witness or in any other capacity, are to be paid to the Council. He must not be more than 45 years of age on September 1, 1910. The commencing salary attaching to the appointment is £700 a year. No fixed allowance will be made to him for travelling expenses, but he will be repaid any such expenses as he may actually incur. Applications for the appointment must be on the official forms, which may be obtained from the Clerk of the London County Council, Spring Gardens, S.W. They should contain full particulars of age, qualifications, and experience, and should be accompanied by copies of not fewer than three testimonials as to character and fitness for the office, with special reference to the qualifications above mentioned. The latest time for receiving applications is 11 o'clock a.m. on Thursday, September 1, 1910. Any form of application which is not fully filled up, or which in any respect fails to comply with the terms of the advertisement, will not be laid before the Council. The appointment will be subject to the successful candidate passing satisfactorily a medical examination by the Council's medical examiner."

M. LOUIS GENTIL.—We learn with pleasure that our friend and correspondent, M. LOUIS GENTIL, Curator of the Brussels Botanic Gardens, and editor of *La Tribune Horticole*, has recently been honoured by the National Horticultural Society of France by being appointed a corresponding member of that Society. M. GENTIL, we may add, is likewise a corresponding member of our own R.H.S.

VISIT TO EAST BURNHAM PARK.—About forty members of the Committees of the Royal Horticultural Society availed themselves of the invitation of Mr. and Mrs. HARRY J. VEITCH to visit East Burnham Park on Thursday, July 7. The party left Paddington at 10.40 a.m., and was conveyed in brakes to East Burnham Park. The beautiful gardens were inspected, and the extensive rockeries and wild garden were much admired. They contain some of the original plants of the species collected by WILSON in China. The pretty water-garden, with its Water Lilies and marsh plants at the sides; the Rosary, the model dairy, and the many rare trees, including some fine examples of *Cedrus atlantica glauca*, are among the most interesting features. After lunch, members spent the rest of the time according to their several desires. Mr. VEITCH accompanied one party to Burnham Beeches, pointing out the peculiarities of the old trees; other parties played bowls or cricket, or continued their inspection of the gardens until tea-time. Several apologies were received from those who kept the appointment open until the last moment, hoping to be present. In replying to an address of thanks at the lunch, Mr. VEITCH alluded to this point, and said that he hoped that, by arranging for an earlier visit next year, some friends who were now unavoidably absent would be able to honour him and Mrs. VEITCH with their presence.

THE HOLLAND HOUSE SHOW.—In addition to the exhibits at this show mentioned in the report published last week, we are reminded that a collection of watering-cans was exhibited by Mr. J. HAWS, and that Mr. L. R. RUSSELL showed a large group of tree and standard Ivies, for which he was awarded the Society's Gold Medal. The Delphinium known as Rev. E. Lascelles was shown by Messrs. ALFRED A. WALTERS & SON, Kensington Nurseries, Bath.

BOTANICAL INSTITUTE OF BUITENZORG.—The botanical garden of Buitenzorg, in Java, so ably developed and administered by Dr. TREUB, is well known among botanists as a centre where the scientific study of tropical vegetation has been prosecuted with much vigour and success. Although established in 1817, it was not until about 1840 that the garden assumed much of its present shape, when TEYSMANN gathered together a collection of some 10,000 species. In 1880 Dr. TREUB was appointed director by the Dutch Government, and, soon after his arrival in Java, conceived the idea of making the garden a centre for the study of tropical plants. In 1885 a laboratory was built and well equipped for the use of botanists from all parts of the world. Advantage has been taken of the splendid facilities offered there for research by representatives from many countries, and in the *Annales* of the garden are published numerous papers of great scientific and practical interest by visitors as well as by the director and his colleagues. Little by little, the organisation of the garden has been extended, and special laboratories have been erected for the study of physiology and pathology of tropical plants, and the chemistry of the medicinal products which they yield, as well as for the investigation of problems connected with the soil. Through the efforts of Dr. TREUB and his staff, our knowledge of the Malayan flora has been greatly improved, and horticulture has benefited by the introduction of many new forms and species of Orchids, Palms, Ferns and other warm-house plants. A smaller, supplementary garden has been formed in the forest of Tjibodas, on the north-east flank of the volcanic mountain of Gedeh, at an elevation of 5,000 to 6,000 feet, for the study of plants which do not thrive in the hot, humid climate of Buitenzorg. An area of some 600 acres of virgin forest is also annexed, and will be retained in its primitive state. Since 1905, the work of the gardens at Buitenzorg has been included in the purview of the newly-formed Department of Agriculture for the Dutch Indies, which is concerned with the forestry of the colony, as well as with the cultivation of Rubber, Quinine, Tobacco, Sugar cane, Rice, and other crops for which Java is specially suited.

PUBLICATIONS RECEIVED.—*Summer Flowers of the High Alps*, by Somerville Hastings. (London: J. M. Dent & Sons, Ltd.) Price 7s. 6d.—*Window and Indoor Gardening*, by T. W. Sanders. (London: W. H. Collingridge.) Price 2s. 6d.—*City, Suburban and Window Gardening*, by D. Grant Melver. (London: DAWBARN & WARD, Ltd.) Price 6d. net.—*The Subantarctic Islands of New Zealand*, by Chas. Chilton. Vols. I. and II. (London: Dulau & Co., Ltd.) Two vols., 42s. net.—*The Rural Science Series*, by K. H. Bailey: "Fruit Growing in Arid Regions," by Wendell Paddock and Orville B. Whipple. (London: Macmillan & Co.) Price 6s. 6d. net.—*Royal Botanic Gardens, Kew: Bulletin of Miscellaneous Information*. (London: Darling & Sons, Ltd.) Price 3d.—*Gardening for All*, by James Udale. (London: Simpkins.) Price 1s.—*Dunedin City Corporation: Seventh Annual Report of the Reserves Department*, by D. Tannock, Superintendent. (Dunedin: S. Lister.)—"One and All" *Garden Books*. Edited by E. O. Greening.—*Garden Allotments*, by J. Wright. Price 1d. (London: Agricultural and Horticultural Association, Ltd.).

SOCIETIES.

NATIONAL ROSE. GREAT SUMMER EXHIBITION.

JULY 8.—The thirty-fourth summer exhibition of this Society was held on the 8th inst. in the Botanic Gardens, Regent's Park. These exhibitions keep pace with the importance of the Society, which is the most successful of all associations devoted to a special flower. The blooms were not quite so good as last year, owing to the recent heavy rains, but in other respects the exhibition was one of the finest Rose shows held in the Metropolis. The entries were numerous, the exhibition attracting not only the principal trade growers, but also a large body of amateurs, who contribute very largely to the success of the Society. The weather was fine, but dull, which was, in some respects, an advantage, since the blooms remained fresh. The pub-

the afternoon, visitors awaited in a long line their turn to inspect them; a sight such as is seldom witnessed at a flower show.

NURSERYMEN'S CLASSES.

Not only is the class for 72 blooms of distinct varieties the champion class in the nurserymen's division, but it is also regarded as the most important in the show. On this occasion there were six competitors, sufficient to afford a good contest. Messrs. A. DICKSON & SONS, LTD., Newtownards, Ireland, had no difficulty in beating their rivals, showing large, well-coloured blooms, with few damaged outer petals, such as were conspicuous in blooms on other stands. Their varieties were Frau Karl Druschki (shown grandly), Comtesse d'Oxford, Princesse Marie-Mertschersky, Killarney, Marquise Litta, Bessie Brown, Lohengrin, Mildred Grant (a magnificent bloom), William Shean, Mrs. Theodore Roosevelt, Mme. Edmee Metz, Ulrich Brunner (a grandly-coloured flower), Gustave Grunerwald, John Ruskin, Mrs. R. G. Sharman Crawford,



[Enograph by W. J. Vasey.]

FIG. 18.—HYBRID TEA ROSE "MRS. FOLEY HOBES."

(Award of Merit at the Holland House Show, and Silver Gilt Medal at N.R.S. Exhibition).

lic patronised the show extensively, and we should think that the attendance was larger than at any previous exhibition held under the Society's auspices. Some inconvenience was caused by the sodden condition of the turf in the tents, the gangways in some cases being very muddy; as this obtained at last year's show, there was some justification for the complaints. In other respects everybody's convenience was studied by the hard-working secretary, Mr. Edward Mawley, and his colleagues. A glance at the exhibits sufficed to show that it was a season of red Roses, for in all the collections the deeply-coloured blooms were the best. Our fancy selected Horace Vernet as the Rose of the show, whilst of the lighter kinds, Mrs. Edward Mawley was most beautiful. Four new Roses received the Society's Gold Medal, and four also were awarded Silver-gilt Medals. The new varieties were accommodated in a tent by themselves, and, all through

Suzanne Marie Rodocanachi, Charm (a bright shade of rose), Mrs. John Laing, Marie Baumann, Her Majesty, Chas. Lefebvre, Marchioness of Londonderry, John Stuart Mill, Caroline Testout, Alfred Colomb, Heinrich Schultheis, Gustave Piganeau (a grand flower), Mme. Melanie Souper, White Maman Cochet, Chas. Darwin, Elizabeth Barnes, Comtesse de Raimbaud, Xavier Olibo, Walter Speed (rich, velvet-like crimson), Ellen Drew (extra good), Lady Sheffield (a pale shade of rose, a beautiful bloom), Alice Hill Gray, Lyon Rose, Dr. Andry, Mollie Sharman Crawford, Duchesse de Morny (a magnificent bloom of fine shape), Mrs. Cornwallis West, Muriel Graham, A. K. Williams (a grand red Rose), Ferdinand de Lesseps, E.Y. Teas, Horace Vernet (of beautiful shape and rich colour), Lady Moyra Beauclerc, Ben Cant, Mrs. Ed. Mawley (a big, soft-tinted bloom), Etienne Levet, Bridesmaid, George C. Waud, Dean Hole, Prince

Arthur, Duchess of Portland, Chas. J. Graham. Mrs. Foley Hobbs (see fig. 18), Mrs. Bateman, Mrs. Hubert Taylor, Lady Ashtown, Lady H. Vincent, Florence Pemberton, Victor Hugo, Mme. Vermorel, Ulster, J. B. Clark, Mrs. G. W. Kershaw, Helen Keller (good), and Mrs. David M'Kee (a choice light variety). 2nd, Messrs. D. PRIOR & SON, Colchester, a selection of whose flowers are Dupuy Jamain, Mrs. Edward Mawley, Dr. O'Donel Browne, Horace Vernet (richly-coloured), Dr. Andry (an elegantly-flowered Rose), Her Majesty, Mrs. T. Roosevelt, Gustave Piganeau, Marie Baumann, Mrs. W. J. Grant, J. B. Clark (extra large), and Mme. Chas. Crapelet. 3rd, Messrs. B. R. CANT & SONS, Colchester; 4th, Messrs. FRANK CANT & CO., Colchester.

The next class on the schedule was for 40 distinct varieties shown in triplets, this large number of blooms requiring five boxes for each exhibit. There were five competitors. Again Messrs. ALEX. DICKSON & SONS excelled, having some of the finest Roses in the show. Blooms of Mildred Grant were charming, and others that were especially fine are Ulrich Brunner, Victor Hugo, Marie Baumann, Mrs. R. G. Sharman Crawford, Duchesse de Morny, Lyon Rose, A. K. Williams (a magnificent red Rose), Frau Karl Druschki (extra fine), and Horace Vernet (this magnificent dark-red Rose was especially good on most exhibits). 2nd, Messrs. B. R. CANT & SONS, Colchester, with smaller blooms, conspicuous varieties being Earl of Dufferin, J. B. Clark, Capt. Hayward, George C. Waud (of bright-rose colour), Mrs. Edward Mawley, and Mrs. W. J. Grant. 3rd, Messrs. D. PRIOR & SON.

A splendid competition resulted in the class for 48 blooms of distinct varieties, no fewer than nine exhibits being forthcoming. There was not a great deal to choose between the stands that were awarded the four prizes, but Mr. GEO. PRINCE, Oxford, showed rather the best, having a good, even lot of flowers, nothing remarkable as to size, but fine in shape and brightly coloured. A big bloom of Dean Hole was grand, also those of Konigin Carola, White Maman Cochet, Mrs. Edward Mawley (this fine Rose was conspicuous on other stands, being one of the best light Roses this season), Gustave Piganeau, Capt. Hayward, and Victor Hugo (of exquisite shape and deepest-red colour). 2nd, Mr. HUGH DICKSON, Royal Nurseries, Belfast, having choice blooms of Joseph Hill, Etienne Levet, Mrs. David Hanna, Mrs. John Laing, Leslie Holland, J. B. Clark, and Lady Ursula. 3rd, Mr. HENRY DREW, Longworth, Berkshire, in whose collection was a magnificent flower of Avoca.

There were also nine competitors in the class for 24 blooms of distinct varieties, the 1st prize being awarded to Mr. JOHN MATTOCK, New Headington Nursery, Oxford, who had Lohengrin, C. J. Graham (of fine red colour), Dean Hole, Countess of Caledon, Mildred Grant, Frau Karl Druschki, and Horace Vernet, especially good. 2nd, Mr. JOHN PIGG, Royston, Hertfordshire, with big blooms, some being full-blown, a defect on the exhibition table. 3rd, Messrs. PERKINS & SONS, Birmingham, with small but finely-shaped blooms—a good, even collection, Avoca being shown grandly.

In the class for 16 distinct varieties, shown in triplets, there were eight exhibits, those in the 1st prize collection, shown by Messrs. G. & W. H. BURCH, Peterborough, being well matched in size, but not extra large. We noticed amongst the finer examples J. B. Clark, Gustave Piganeau (one bloom of the trio was magnificent), A. K. Williams, Dean Hole, Mrs. John Laing, Mme. Eugene Verdier, and Horace Vernet. The 2nd prize exhibit, which we preferred to the former, was shown by Mr. GEORGE PRINCE, and included choice examples of Marie Baumann, Mildred Grant, Victor Hugo, Hugh Dickson, Mrs. John Laing, and J. B. Clark. 3rd, Mr. W. LEGGETT, Colchester.

HYBRID TEA ROSES.

These Roses were not extra good, for which the season must be blamed. There were six contestants in the class for 16 distinct varieties, the 1st prize falling to Mr. HUGH DICKSON for small, but refined blooms of Joseph Hill, Countess of Gosford, Mme. Jules Grolez, General McArthur, Lyon Rose, Pharisaer, Richmond, and others; 2nd, Mr. JOHN MATTOCK; 3rd, Messrs. FRANK CANT & CO.

TEA AND NOISETTE ROSES.

The D'Ombra Cup was offered as the 1st prize in the class for 24 varieties, the successful exhibitor being Mr. GEO. PRINCE, who won easily. The variety Mrs. Ed. Mawley was his finest specimen. Others that were notable were White Maman Cochet, Mme. Jules Gravereaux, Molly Sharman Crawford, and Muriel Graham. 2nd, Mr. HENRY DREW, whose choicest blooms were Mrs. Ed. Mawley, Mme. Constant Soupert, Medea, and Auguste Comte.

For 12 blooms of these Roses, Mr. MATTOCK had the best amongst six exhibitors, Messrs. J. BURRELL & CO., Cambridge, being placed 2nd, and Mr. JOHN PIGG 3rd.

For 14 varieties, shown as triplets, in vases, Mr. GEO. PRINCE excelled, having much the best flowers, Mrs. Edward Mawley, White Maman Cochet, and The Bride being outstanding varieties. 2nd, Mr. HENRY DREW; 3rd, Messrs. FRANK CANT & CO.

VASE CLASSES.

These made a pleasing change from the exhibition boxes, the flowers appearing more graceful.

sion of all types of the flower is permissible. As usual, two growers only competed in the class for a floor group, viz., Messrs. G. PAUL & SON, Cheshunt, and Messrs. HOBBS, LTD., Dereham, Norfolk, who won in the order named. Both firms showed finely, making a free use of pillar varieties, the beautiful Shower of Gold in Messrs. PAUL's group being magnificent. Messrs. PAUL had also the new Mme. Second Weber, Lady Godiva (a light Rambler of flesh-pink tint), Paradise (pink, with a white "eye"), Evangeline (a bluish Rambler), Coquina, Victor Hugo, and others.

The imposing groups of Roses staged on tabling measuring 100 square feet were magnificent. The first prize was awarded to Mr. JOHN MATTOCK for a display of choice blooms, attractively presented. The next two were of equal merit, and received equal 2nd prizes, the exhibitors being Messrs. GEO. MOUNT & CO., Canterbury, and Messrs. W. & J. BROWN, Peterborough. Mr. F. M. BRADLEY, Peterborough, also showed finely, having a lovely epergne of the pure white, large-flowered, single Simplicity. The other exhibitor was Messrs.



[Photograph by W. J. Vasey.]

FIG. 19.—HYBRID TEA ROSE "MARY COUNTESS OF ILCHESTER": COLOUR DEEP ROSE, WITH SLIGHT VIOLET SHADE.
(Award of Merit at the Holland House Show.)

The class for 12 varieties, to include not more than six Tea or Noisette kinds, brought four good displays, amongst which it was an easy task to select the winning blooms. They were shown by Messrs. A. DICKSON & SONS; these vases of Roses were as near perfection as possible. They included Mildred Grant, Horace Vernet, Mrs. W. J. Grant, Mary Countess of Ilchester (see fig. 19), Frau Karl Druschki, and A. K. Williams. 2nd, Messrs. D. PRIOR & SON, whose best variety was Liberty.

For nine varieties of Tea or Noisette Roses Mr. GEO. PRINCE led with a good set, of which White Maman Cochet was the finest.

In the classes for Decorative Roses, Mr. JOHN MATTOCK, Mr. A. TURNER, Messrs. FRANK CANT & CO., and Mr. GEO. PRINCE won 1st prizes.

GROUPS OF ROSES.

These classes afford opportunity for the trade growers to make imposing groups, as the inclu-

R. HARKNESS & CO., Hitchin, who had also a fine display.

In the colour classes, the finest crimson variety was J. B. Clark, shown by Mr. WALTER BENTLEY; the finest white or yellow kind, Frau Karl Druschki, exhibited by THE KING'S ACRE NURSERY Co.; and the finest of any other shade Mrs. Theodore Roosevelt, shown by Messrs. D. PRIOR & SON.

The best nine blooms of a new Rose were shown by Messrs. ALEX. DICKSON & SONS, who staged the creamy-coloured Walter Speed.

Tables of Roses formed a feature in one of the tents, and Messrs. G. JACKMAN & SON, Woking, had a quantity of decorative varieties, such as Tausendschön, Rene André, Alberic Barbier, Mrs. F. W. Flight, and others, displayed on a table about 4 feet square. Mr. C. TURNER, The Royal Nurseries, Slough, had a similar one, but the Roses displayed on it were different. The 2nd prize in this—the 14th class—was taken by

Messrs. W. SPOONER & SON for Rambler Roses in variety. There were many such tables.

AMATEUR'S CLASSES.

The competition in most of the classes for cut blooms was very keen, and the blooms, taken as a whole, were of more than average good quality.

In the champion class, open to all amateurs, irrespective of the number of plants they grow, for 36 blooms, distinct varieties, E. B. LINDSELL, Esq., Hitchin, was 1st, winning the Champion Trophy and Gold Medal, with a very fine lot of flowers. We name the varieties:—Horace Vernet, Chas. Lefebvre, Ulrich Brunner, Marquise Litta, Marie Baumann, J. B. Clark, and Wm. Shean. In the same class, R. DENNISON, Esq., Cranford, was 2nd, his finest blooms being Ulrich Brunner, Capt. Hayward, Mrs. J. Laing, H. Watson, J. S. Mills, and Horace Vernet; 3rd, CONWAY JONES, Esq., Hucclecote, Gloucester, with very fine examples of Countess Oxford, J. B. Clark, Capt. Hayward, Mrs. Sharman Crawford, and Mrs. Theo. Roosevelt, a little spoilt by rain. A 4th prize was awarded to the Rev. F. G. W. HENSLOW, Stanton Street, Quinton, Chippenham. The competitors were numerous and the competition severe.

Twenty-four blooms, distinct.—E. B. LINDSELL again won the 1st prize, and his best flowers, grand in size, were Ulrich Brunner, Duchess of Bedford, Dean Hole, Hugh Dickson, and a very fine specimen of Mrs. T. Roosevelt; 2nd, G. A. HAMMOND, Esq., Cambrian House, Burgess Hill, Sussex; altogether a splendid exhibit, the blooms being not over large, and of fine form; 3rd, F. DENNISON, Esq., Cranford.

Twelve blooms, distinct (trebles).—CONWAY JONES, Esq., was 1st, his best flowers being G. Piganeau, Mrs. T. Roosevelt, A. K. Williams, J. B. Clark, Alfred Colomb, a fine old Rose, appearing in many of the exhibits; and Lady Ash-town; 2nd, A. TATE, Esq., Downside, Leatherhead; 3rd, Rev. F. G. W. HENSLOW.

Nine blooms of any variety of the Rose excepting Tea or Noisette.—1st, R. F. HOBBS, Esq., Thornlea, Worcester, who exhibited blooms of Frau K. Druschki, quite even in regard to their size; 2nd, E. B. LINDSELL, Esq., who showed Mrs. T. Roosevelt; 3rd, the Rev. F. G. W. HENSLOW, with excellent flowers of La France.

CLASSES FOR GROWERS OF FEWER THAN 3,000 PLANTS.

Twenty-four blooms, distinct.—E. M. EVERS-FIELD, Esq., Dénne Park, Horsham, won the 1st prize and the "Hobbies" Challenge Cup with a splendid collection. The finer blooms were J. B. Clark, Florence Pemberton, Mrs. J. Laing, Marie Baumann, Marquise Litta, Charles Darwin, Suzanne Marie Rodocanachi, and Mrs. E. Mawley; 2nd, Rev. J. A. L. FELLOWES, Attleboro', his best blooms being Marquise Litta, Mrs. W. J. Grant, and Alfred Colomb; 3rd, W. BOYES, Esq., Middleton-on-the-Wolds, E. Yorkshire.

The best nine blooms in this division came from E. M. EVERS-FIELD, Esq., the variety being Frau Karl Druschki; 2nd, W. BOYES.

GROWERS OF FEWER THAN 2,000 PLANTS.

W. J. THORPE, Esq., Hucclecote, Gloucester, had the best collection of 24 blooms, winning the N.R.S. Challenge Cup. His best flowers were J. B. Clark, Mrs. David McKee, a creamy-white flower; François Michelin, A. K. Williams, Horace Vernet, Comte de Raimbaud (a variety but little esteemed now), Prince Arthur, and Angelo Peluffo, a pink-coloured Rose, very choice in form; 2nd, W. R. HAMMOND, Esq.; 3rd, W. O. TIMES, Esq., Hitchin.

Eighteen blooms, distinct.—G. R. BONNER, Esq., Tillingbourne, Gloucester, was 1st, whose best blooms were J. B. Clark, Charles Lefebvre, A. K. Williams, Marechal Niel, Gladys Harkness and G. C. Waud; 2nd, Dr. T. E. PALLET, Earl's Colne, Essex; 3rd, GULLIVER SPEIGHT, Esq., Market Harboro'.

For six blooms of any Rose except Tea or Noisette, W. R. HAMMOND, Esq., and C. C. WILLIAMSON, Esq., Welstead, Canterbury, were declared equal 1sts.

For 8 distinct varieties (trebles).—1st, W. O. TIMES, Esq., with excellent blooms, even as to size, and perfect in shape and condition; 2nd,

Mrs. BEVELLE FORTESCUE, Dropmore, Maidenhead; 3rd, W. J. THORPE, Esq.

GROWERS OF FEWER THAN 1,000 PLANTS.

Twelve blooms, distinct.—C. F. H. LESLIE, Esq., Epscombe, Hertford, won the 1st prize with fine blooms of Mme. Melanie Soupert, Horace Vernet, Queen of Spain, Mme. Jules Gravereaux, J. B. Clark, and Mrs. E. Mawley; 2nd, Dr. C. LAMPLUGH, Alverstoke; 3rd, M. WHITTLE, Esq., Belgrave Avenue, Leicester.

GROWERS OF FEWER THAN 750 PLANTS.

Twelve blooms, distinct.—Rev. L. C. CHALMERS HUNT, Hitchin, showed the best collection, and he had very fine blooms of Ulrich Brunner, Oscar Cordel, and Mrs. J. Laing; 2nd, H. L. WETTERN, Esq., Waratha, Sanderstead.

DECORATIVE ROSES.

In a tent apart from the rest of the show, were bowls of Roses, and tables laid out with various decorations with Roses, all more or less graceful and beautiful. A bowl filled with the single-flowered Damas Rose was the prettiest shown; but the judges gave the 1st prize to one filled with the variety Irish Elegance. This last was shown by Miss LANGTON, Raymoad, Hendon. The table decorations, carried out with Irish Elegance, were charming beyond measure.

A piece of plate, presented by A. Tate, Esq., and a 1st prize fell to Miss E. S. SCOTT, for table decorations carried out with the Lyon Rose.

GOLD MEDAL ROSES.

The Society's Gold Medal was awarded to the four novelties following:—

Lady Hillingdon.—A richly-coloured yellow Tea variety, of conical shape and with petals of good substance. Shown by Messrs. LOWE & SHAWYER.

Rayon d'Or.—A moderately-full flower of a canary-yellow colour. Shown by Dr. A. R. WADDELL, Baldock.

Edward Mawley.—A deep-crimson variety, possessing considerable fragrance. Shown by Messrs. S. MCGREDY & SON, Portadown.

Joseph H. Welch.—A large flower of a deep-pink colour, having a conical centre. Shown by Messrs. MCGREDY & SON.

OTHER NEW ROSES.

MESSRS. LOWE & SHAWYER exhibited their seedling hybrid Tea Mrs. George Shawyer. The flower has the colour of the favourite "old rose" pink; has a long Niphetos-like shape, and appears to be fairly full of petals. (Silver-gilt Medal.)

MESSRS. B. R. CANT & SONS, Colchester, showed Rose St. Helena, H.T., of their raising. The flower is of a delicate flesh colour, tinted with yellow; somewhat pointed in shape before being fully expanded, and possesses a pleasing contour. (Silver-gilt Medal.)

MESSRS. B. R. CANT & SONS likewise showed a H.T. named Colcestria, a flower of a cerise tint, and possessing much substance in the petals and with sufficient of these to make a full flower. A card of Commendation was awarded.

MESSRS. MCGREDY & SON showed H.T. Rose Evelyn Dauntsey, apparently developing to an unusually large size. The colour is pale-flesh on the inner side of the petals and of a deep purplish-cerise on the outer side. The flower has a cone-shaped centre, and much fragrance. (Silver-gilt Medal.)

MESSRS. ALEXANDER DICKSON & SON, Newtownards, showed a new seedling Rose, Mrs. Foley Hobbs (see fig. 18) white, with a faint flesh tinge. The flower is full and has a pointed centre. (Silver-gilt Medal.)

MESSRS. DICKSON & SON showed Rose Mrs. Gordon Sloan, of a charming flesh tint; the flower has a filbert-like centre and the colour is more intense at this part than elsewhere. It received a card of Commendation.

PREMIER BLOOMS.

Nurserymen.—H.P. Horace Vernet, shown by Messrs. ALEXANDER DICKSON & SONS; H.T. White Maman Cochet, shown by Mr. GEORGE PRINCE; T. Melaine Soupert, shown by Messrs. SAMUEL MCGREDY & SON.

Amateurs.—H.P. Beauty of Waltham, shown by Mr. JOSEPH DODWELL; H.T. Mrs. T. Roosevelt, shown by Mr. CHARLES COOKE; T. Maman Cochet, shown by Dr. F. H. COOKE.

MISCELLANEOUS EXHIBITS.

Several collections of cut flowers were displayed in the entrance corridor, and a few sundriesmen found places for their wares.

Messrs. STUART LOW & CO., nurserymen, Bush Hill Park, exhibited an astonishingly large collection of Souvenir de la Malmaison and perpetual-flowering Carnations, a host of beautiful varieties of Roses, and, under a great cloche, a dish each of the Lowberry and a hybrid Rubus named Phenomenal. Both of these fruits have been praised by those who have partaken of them.

Messrs. R. H. BATH, LTD., Wisbech, showed an immense collection of Delphiniums in great variety.

Mr. HOWARD H. CRANE, of Highgate, N., had a beautiful display of Violas and Pansies.

Messrs. DOBBIE & CO., Edinburgh, were exhibitors of Sweet Peas, which have seldom been so lavishly brought before the public.

The Misses HOPKINS, Shepperton-on-Thames, showed an Alpine garden furnished with appropriate plants.

NATIONAL SWEET PEA.

JULY 12, 13.—The tenth exhibition of this Society was held at the Royal Horticultural Hall, Vincent Square, and, despite the unpropitious season, the flowers were finer than ever. The show itself was not quite so large, the exhibits being fewer in the smaller classes. It is pleasing to note a record attendance; the Hall was quite crowded in the afternoon of the first day.

The gallery was beautifully decorated with large Palms and Sweet Peas by Messrs. C. H. CURTIS and H. D. TIGWELL. It was well done, and was greatly admired by the visitors.

The "Sutton" Cup class for 18 bunches, distinct, the trade excluded, resulted in a fine competition, though it must be said that the disqualification of Sir Randolph Baker, Bart., M.P., Ransome House, Blandford (gr. Mr. A. E. Usher), for a single spray above the number was a regrettable incident which robbed him of a well-earned honour. His exhibit was in every way superb. The 1st prize was awarded Mr. J. HAYCOCKS, Wrexham, who staged some very fine flowers. The varieties employed were Menie Christie, Clara Curtis, Mrs. A. Ireland, Countess Spencer, Helen Lewis, Marquis, Elsie Herbert, Frank Dolby, Mrs. Hardcastle Sykes, The King, Mrs. H. Bell, Etta Dyke, Evelyn Hemus, Aurora Spencer, Helen Pierce, John Ingram, Nora Unwin, and Constance Oliver. The Right Hon. Sir G. O. TREVELYAN, Bart., Wallington Hall, Cambridgeshire (gr. Mr. E. Keith), was 2nd, having capital examples of Helen Lewis, Mrs. A. Ireland, Elsie Herbert, Countess Spencer, Constance Oliver, Helen Pierce, and Clara Curtis. The 3rd prize was awarded to Lady F. HESKETH, Towcester (gr. Mr. G. T. Hallett), for a pretty display, while Mrs. A. TIGWELL, Harrow View, Greenford, was awarded the 4th prize.

For 24 bunches, distinct, Mrs. A. TIGWELL was awarded the 1st prize for a collection which included the following varieties:—George Herbert, Miriam Beaver, Mrs. Townsend, Evelyn Hemus, Helen Pierce, King Edward (Spencer), Masterpiece, W. T. Hutchins, Dazzler, Prince Olaf, Tennant (Spencer), Senator, Mrs. H. Sykes, Mrs. Tigwell, Elsie Herbert, Flora Norton (Spencer), Marjorie Linzee, Mrs. H. DICKENS, Doris Burt, Arthur Unwin, and Zero. The 2nd prize was won by Mrs. A. J. NORRIS, Longshaw, Chipstead (gr. Mr. S. Horscroft), who had some beautiful vases of Captain of the Blues, Paradise Ivory, Apple Blossom (Spencer), Clara Curtis, and Mrs. Hardcastle Sykes.

The Eckford Memorial Class for 12 bunches, distinct, excited the keenest competition, and the flowers were good throughout. Mr. A. E. USHER, however, won handsomely. The varieties were Mrs. C. W. Breadmore, Clara Curtis, The King, Elsie Herbert, Helen Lewis, George Herbert, Mrs. H. DICKSON, Marjorie Linzee, Miss A. Crier, and John Ingman. E. G. MOCATTA, Esq., Woburn Place, Addlestone (gr. Mr. T. Stevenson), showed splendidly for the 2nd prize, his best varieties being Prince of Asturias, Constance Oliver, Elsie Herbert, Princess Juliana, and Earl Spencer. Mr. T. JONES, Bryn Penylan, Ruabon, was awarded the 3rd prize for flowers that appeared to be rather overdone, while F. A. WELLESLEY, Esq., Westfield, Woking (gr. Mr. W. Hopkins), secured the 4th prize with splendid flowers, that lacked length of stem.

In the class for 12 bunches, distinct, Mrs. A. TIGWELL secured the 1st prize with a good, level display. The best were Etta Dyke, Lord Nelson, The King, John Ingram, Clara Curtis, and Prince Olaf. Mr. G. F. HALLET was 2nd, with good vases of Mrs. Chas. Foster, Etta Dyke, Clara Curtis, and Lord Nelson.

The "Breadmore" Challenge Class was for 12 bunches, distinct. This class was a very popular one. Mr. W. H. PROPHET, Par Station, Cornwall, won with the varieties Dazzler (splendid), Prince of Asturias, Mrs. Breadmore, Paradise, Red Flake, George Herbert, James Grieve, Prince Olaf, Mrs. Ireland, Etta Dyke, Henry Eckford, Mrs. H. Bell, and F. Unwin. Dr. J. E. PHILLIPS, Malpas, was 2nd, and Mr. E. COWDY, Greenhall, Longhall, Co. Armagh, 3rd.

For six bunches, distinct, Mr. E. KEITH captured 1st honours, having a very even exhibit, which included excellent flowers of Tom Bolton, Princess Juliana, and America Spencer. Mr. F. G. HARRISON, Rosedene, Ulverston, was a close 2nd, for he had fine vases of Elsie Herbert, Mrs. H. Sykes, and Asta Ohn. A. W. STIRLING, Esq., Holme Lee, Goring (gr. Mr. A. Moring), was 3rd, while E. OTTER, Esq., Stanhope Park, Greenford (gr. Mr. F. Fairbairn), was awarded the 4th prize.

The "Humphrey" Cup class for three bunches of comparatively new varieties found Mr. A. E. USHER again to the fore with very fine examples of Lavender George Herbert, American Spencer and a glorious bunch of Earl Spencer. Mr. T. STEVENSON occupied the 2nd place, and he had grand flowers of Silas Cole. Mr. W. H. PROPHET was 3rd.

The "classification" class, open to all, was for 18 bunches, distinct.—Mr. A. E. USHER continued his success by winning the 1st prize for this class, staging Mrs. C. W. Breadmore, Constance Oliver, Marquis, Aurora (Spencer), Helen Lewis, Helen Pierce, Mrs. H. Sykes, Rosie Adams, Clara Curtis, Marie Christie, Frank Dolby, Hannah Dale, Mrs. A. Ireland, The King, Countess Spencer, Etta Dyke, Prince Olaf, and John Ingram, a really fine exhibit. Mr. C. W. BREADMORE, Winchester, was 2nd with good, even flowers, his best varieties being Clara Curtis, Mrs. H. Sykes, The King, and Marquis. 3rd, Mr. JAS. BOX, Lindfield.

Sixteen bunches.—There were but two entrants in this class. Mr. A. E. USHER won the 1st prize; and Mrs. A. TIGWELL the 2nd prize.

The class for 24 bunches was very strong, and here Mr. C. W. BREADMORE carried off 1st honours with a splendid collection. His best varieties were Dusky Monarch, Constance Oliver, Lavender George Herbert, Ivy Herbert, Countess Spencer, Dazzler, Sybil Eckford (really fine), Princess Juliana, Senator Spencer, Marjorie Willis, Mrs. H. Bell, and Prince Olaf. Mr. A. E. USHER was 2nd.

Twelve bunches.—Messrs. E. W. KING & Co., Coggeshall, won the 1st prize in this class with beautifully fresh flowers, though hardly developed. The most striking were Constance Oliver, Mrs. W. King, Anglian Orange, Anglian Pink, Rosabelle, and Evelyn Hemus. Mr. W. HOPKINS was 2nd, showing much larger flowers, but they were rather weather-stained; while Mr. S. MILLER, Newport, Isle of Wight, was 3rd.

NEW VARIETIES.

The single bunches of new varieties formed an attractive competition. Mr. C. W. BREADMORE won the 1st prize with Iris, a beautiful shade of salmon. The varieties Earl Spencer and Dazzler won the 2nd and 3rd prizes respectively.

FLOWERS WITH WAVED STANDARDS.

The following classes (trade excluded) were for varieties with waved standards:—

For 12 bunches.—Mr. THOS. STEVENSON was to the fore with some splendid flowers. They were Clara Curtis, Mrs. Chas. Foster, Dazzler, Black Knight (Spencer), John Ingram, Mrs. Hugh Dickson, America Spencer, Rosie Adams, Helen Lewis, Evelyn Hemus, Etta Dyke, and Sunproof Crimson. E. J. JOHNSON, Esq., Burrs Wood, Groombridge (gr. Mr. A. J. Paskett), had good, clean flowers for the 2nd prize; while the 3rd prize was won by Sir CHAS. HADDEN, K.C.B., Rossway, Berkhamsted (gr. Mr. O. Hayles).

In a class for six bunches, H. LE BLANC SMITH, Esq., The Lordship, Standon (gr. Mr. Maclean), won the 1st prize with a very neat exhibit of good colour. His varieties were Elsie Herbert,

Constance Oliver, Princess Juliana, and Mrs. C. W. Breadmore. Mr. F. G. HARRISON was 2nd, and Mr. A. MORING 3rd.

The class for four bunches was not a popular one, Mr. A. E. USHER leading off with fine examples of Colleen, Queenie, and Winsome.

For three bunches, distinct, Mr. W. H. PROPHET was 1st with George Herbert, Paradise Ivory and Lavender George Herbert, Messrs. J. HAYCOCKS and A. L. THOMAS, Kenley, winning the other prizes respectively.

For three bunches of waved, pink varieties, the exhibitors staged three kinds, which was not required. However, they were judged on their merits, Mr. W. H. PROPHET winning with fine vases of Audrey Crier, Mrs. H. Sykes, and O. Bolton. Dr. J. E. PHILLIPS, Malpas, followed with Olive Ruffell, Sycira Lee and Countess of Northbrook. Mr. F. G. HARRISON was 3rd.

The cream-pink varieties were represented by Mrs. H. Bell and Constance Oliver. The 1st prize was won by Mr. W. H. PROPHET. The other variety in the class was Sycira Lee.

SPECIAL PRIZES.

The "E. W. King" Challenge Cup, for 12 varieties, was won handsomely by Mr. W. H. PROPHET with Elsie Herbert, Mrs. Chas. Foster, Menie Christie, Mrs. C. W. Breadmore, St. George, Phenomenal, Mrs. A. Ireland, and George Herbert. The Rev. O. TURNER, Woburn Park, Weybridge (gr. Mr. A. Basile), was 2nd, and Dr. J. E. PHILLIPS 3rd.

Mr. ROBERT BOLTON, Carnforth, won the "W. Atlee Burpee" Challenge Trophy for a display of Sweet Peas; this being Mr. BOLTON's third win, the trophy becomes his property. His table was nicely arranged and formed a centre of attraction. The new variety Charles Foster was very prominent, as were also vases of R. F. Felton, Earl Spencer, Clara Curtis, Etta Dyke, Monitor, Elsie Herbert, and O. Ruffell. Mr. JAS. BOX, Lindfield, was 2nd, with a somewhat similar exhibit, while Messrs. J. KELWAY & SON, Langport, were 3rd.

For 12 varieties of scheduled names, Mr. A. E. USHER once again proved the victor, having de lightful examples of Asta Ohn, F. Morse (Spencer), Flora Norton (Spencer), Othello (Spencer), Tennant (Spencer), and Queen Victoria (Spencer). Mr. T. JONES was 2nd for fine vases of Flora Norton (Spencer), Mrs. Routzahn and Marie Corelli, while Mr. ROBERT WRIGHT, Halsall Lane, Formby, was 3rd.

In a class for six varieties, Mr. A. E. USHER won 1st prize with splendid examples of King Edward (Spencer), Etta Dyke, George Herbert, Othello (Spencer), Countess Spencer, and Clara Curtis. Messrs. T. JONES and F. G. HARRISON were the other winners in the order named.

For four varieties of American varieties, Mr. A. E. USHER was 1st with Miriam Beaver, Marie Corelli, W. T. Hutchins, and Senator (Spencer).

In the class reserved for market growers, there were many exhibits. The 1st prize was won by Mr. G. REID, Downfield, Dundee, who had a good exhibit; Dr. J. E. PHILLIPS was 2nd.

The "Horace Wright" Challenge Cup class secured a large entry. Mr. F. GREEN, Morris Road, Southampton, won with good, fresh bunches of Helen Lewis, George Herbert, Clara Curtis, Evelyn Hemus, John Ingram, and Asta Ohn. Mrs. HOWARD YOUNG, Filton Avenue, Horfield, Southampton, was 2nd, and Mr. L. C. B. HOCKIN, High House, Sutton Green, 3rd.

The "Walter Voss" Challenge Cup for six bunches to represent the different class colours was secured by Mr. E. D. MARSHALL, Early Rise, Reading, with good typical vases of Mrs. H. Sykes, Etta Dyke, and Elsie Herbert.

DECORATIVE CLASSES.

These classes were well filled, the best dinner table decoration was arranged by Mrs. W. MASLIN, Ongar Hall Cottages, Addlestone, who used pink and cream-coloured flowers. Mrs. A. ROBINSON, Park Hill, Carshalton, followed, using similar colours. Mrs. DE BURLATTE, Wraybury, was 3rd. The exhibits were very numerous and occupied all the centre of the hall.

Mrs. MASLIN was again successful with an epergne, a fine light design; Mrs. VOKES, Horsall, Woking, was 2nd; and Miss M. JONES, Wem, 3rd. The vases were equally good, as were also the buttonholes and sprays.

TRADE GROUPS.

The miscellaneous groups of Sweet Peas were all backed to the wall. Arches were freely used, as were also trails of Smilax. The following were the exhibitors:—Messrs. JARMAN & Co., Chard; JONES & SONS, LTD., Shrewsbury; J. KELWAY & SON, Langport; E. W. KING & Co., Coggeshall; SUTTON & SONS, Reading; C. W. BREADMORE, Winchester; Messrs. H. J. JONES' NURSERIES, LTD., Lewisham; Miss HEMUS, Upton-on-Severn; R. BOLTON, Carnforth; DOBBIE & Co., Edinburgh; ATLEE BURPEE & Co., Philadelphia; G. STARK & SON; J. BOX, Lindfield; W. DEAL, Kelvedon; BIDE & SONS, Farnham; W. CANTLEY, Bury St. Edmunds; G. & A. CLARK, LTD., Dover; G. STEVENSON, Wimborne; J. AGATE, Havant; W. J. UNWIN, Histon; R. SYDENHAM, LTD., Birmingham; J. R. KING & SONS, Coggeshall; and Mr. W. E. ALSEN.

The Silver Medal was awarded Mr. J. AGATE for Stirling Stent, while Awards of Merit were Arthur Green, from Messrs. DOBBIE & Co.; to Mrs. Hugh Dickson, from the same firm; to Masterpiece, also from Messrs. DOBBIE & Co.; and Cherry Ripe, from Messrs. GILBERT & SON.

MEDALS.

Gold.—Messrs. E. W. KING & Co., SUTTON & SONS, C. W. BREADMORE, R. BOLTON, and DOBBIE & Co.

Silver-gilt.—Messrs. W. E. ALSEN, W. J. UNWIN, JONES & SONS, JAS. BOX, and Messrs. C. H. CURTIS and H. D. TIGWELL.

Silver.—Messrs. JARMAN & Co., G. STEVENSON, J. R. KING & SONS, R. SYDENHAM, LTD., J. KELWAY & SONS, Miss E. HEMUS, G. STARK & SON, W. DEAL, S. BIDE & SONS, W. CANTLEY, and G. & A. CLARK, LTD.

HANLEY HORTICULTURAL FETE.

JULY 6, 7.—The weather on the opening day of the fourteenth annual show, held in the Hanley Park, Staffordshire, was unpropitious in the extreme. It commenced to rain on the evening of the 5th, and continued throughout the greater part of the first day of the show: this fact was responsible for the very meagre attendance of visitors. The number of exhibitors and entries exceeded those of last year, and six big tents were required to accommodate the exhibits.

The park in which the show is held is adjacent to the Stoke railway station, and is well served by trains and trams from Tunstall, Burslem, Longton, Stoke, Fenton, Newcastle, and other towns in the Potteries. The schedule was divided into four sections, and comprised 89 classes. Prizes amounting to upwards of £650 were offered, in addition to silver cups, gold and silver medals. A silver challenge cup, value £10 10s., offered for the best trade exhibit, was well won by Messrs. WEBB & SONS, Stourbridge, who now retain the cup, having won it upon two previous occasions.

GROUPS OF PLANTS.

The leading group class was for collections of plants in or out of flower, arranged on spaces of 500 square feet down the centre of the big tent. The prizes, amounting to £76, and special prizes of the value of six guineas and three guineas, were added to the 1st and 2nd prizes by Messrs. Brown-Westhead, Moore & Co. and Messrs. Taylor, Tunnicliff & Co., respectively. There were five entries, and, after a close contest, Messrs. JAS. CYPHER & SONS, Cheltenham, won 1st prize, and Mr. W. A. HOLMES, Chesterfield, 2nd prize. The centre of Messrs. CYPHER's group consisted of a big mound crowned by a handsome Kentia, round which Codiaums, Alocasias, Dracenas, Lilliums, Clerodendron fallax, and Kalanchoe flammea were skilfully arranged. Smaller mounds at the corners and sides were clothed with small Palms, and a pleasing variety of foliage and flowering plants, including Cattleyas, Fuchsia triphylla, and Kalanchoe flammea. The undulated ground-work of the group was composed of Dracenas, Begonia Rex, Caladium argyrites, Ferns, Nertera depressa, Fuchsia triphylla, Verbenas, choice Orchids, Lantanas, and broken up here and there with tall specimens of Humea elegans. The 2nd prize group was arranged on similar lines to that of Messrs. CYPHER's, but the effect was marred by the too free use of dwarf blue Lobelia plants. 3rd, Mr. W. VAUSE, Leamington; 4th, Mr. W. R. MANNING, Dudley.

The next important class was one for a group of Orchids, and in this Messrs. JAS. CYPHER & SONS were the only competitors. A hundred square feet of flat tabling was allotted at the end of the principal plant group tent; the collection of plants set up by the Cheltenham firm produced a grand effect, and was much admired. They showed well-flowered examples of *Cattleya Mossiae* and *C. Mendelii*, *Lælio-Cattleya Canhamiana magnifica*, and *L.-C. Aphrodite*; *Odontoglossum Pescatorei*, with large, handsome flowers, possessing a finely-spotted lip. Also *Epidendrum prismatocarpum*, carrying nine spikes of flowers, *Cypripedium Harrisonianum superbum* (very good), and a specimen of *Stanhopea tigrina* bearing a pair of unusually large flowers.

In a class reserved for eight Orchids, Messrs. JAS. CYPHER & SONS easily beat Mr. W. VAUSE, whose plants were poor and much below exhibition standard. Included in the 1st prize set were very good specimens of *Odontoglossum perculum*, *Lælio-Cattleya Canhamiana*, *Vanda cœrulea*, and *Epidendrum prismatocarpum*, the latter carrying 18 spikes, with an average of 29 large flowers on each spike.

The Right Hon. the Earl of SHREWSBURY, Ingestre, Stafford (gr. Mr. E. Gilman), was the only exhibitor in a class provided for Carnations, to occupy an area of 100 square feet. A good selection of *Malmaison* and *Tree* varieties were well shown, the flowers being large, well-formed, and of clear colours.

The best half-dozen specimen plants in flower (Orchids excluded) came from Messrs. JAS. CYPHER & SONS, whose plants of *Clerodendron Balfourii*, *Statice Gilbertii*, *Allamanda nobilis*, and *Ixora Pilgrimii* were very good. Mr. W. VAUSE, who gained the 2nd prize, had splendid examples of *Statice profusa* and *Erica Cavendishiana*; 3rd, Mr. W. R. MANNING, Dudley.

In a class for six plants in flower and six foliage plants, Messrs. JAS. CYPHER & SONS again beat Mr. W. VAUSE. The 1st prize collection contained beautifully-flowered specimens of *Clerodendron Balfourii*, *Ixora Shawii*, and *Bougainvillea Cypheri*, but the *Codiaeums* were inferior to those exhibited by Mr. W. VAUSE. Messrs. JAS. CYPHER & SONS also won 1st prizes for (1) six fine foliage plants, and (2) six Palms, Mr. W. VAUSE being 2nd in each class.

Only one exhibitor came forward in a class reserved for a dozen *Caladiums*. The 1st prize was awarded to T. TAMS, Esq., The Hayes, Stone (gr. Mr. A. H. Ruff), whose plants were large but indifferently coloured.

Mrs. MEAKIN, Darlaston Hall, Stone (gr. Mr. G. F. Goodhill), was awarded 1st prize for a dozen beautiful table plants; 2nd, B. HOWSON, Esq., Market Drayton (gr. Mr. A. Townsend).

In the amateur classes, T. TAMS, Esq., Stone (gr. Mr. A. H. Ruff), won the 1st prize for a group of foliage and flowering plants arranged for effect on a space not exceeding 200 square feet. The group was very bright, and the colour scheme was well carried out. Well-coloured *Codiaeums*, *Caladiums*, *Dracenas*, *Coleus*, *Palms*, and graceful *Bamboos* were the principal foliage plants employed. The flowering plants included *Gloxinias*, *Clerodendron fallax* (very good), *Verbenas*, *Liliums*, *Carnations*, and *Humea elegans*; 2nd, Mrs. SWANN, Halston Hall, Oswestry (gr. Mr. C. Roberts). The foliage plants in this group were not nearly so well-coloured as were those in the 1st prize collection. The general arrangement, however, was good, but inclined to be heavy.

In a class for six specimen stove or greenhouse plants the last-named exhibitor beat three contestants. Excellent plants of *Bougainvillea Sandariana*, *Allamanda nobilis* and *Gloriosa superba* were included in this exhibit; 2nd, Mrs. MEAKIN, Darlaston Hall, Stone (gr. Mr. G. F. Goodhill).

Mr. W. H. WHITE, Newcastle, had the best six Exotic Ferns, distinct, and Mrs. MEAKIN (gr. Mr. G. F. Goodhill) showed 12 well-coloured plants suitable for table decoration.

ROSES (OPEN).

Forty-nine entries were made in the 11 classes reserved for Roses, for which upwards of £100 were offered in prizes.

In the premier class, which was for 72 blooms, distinct, there were five exhibits. The 1st prize of £10 was awarded to Messrs. R. HARKNESS & Co., Hitchin, Herts., whose flowers were of good form, substance and colour. Varieties of outstanding merit included *La France '89*, General Jacqueminot, William Shean, Prince Arthur,

Ulrich Brunner, Lyon Rose, Mrs. Edward Mawley, Captain Hayward, Dupuy Jamain, Mrs. Cocker, Mildred Grant, Marie Baumann, Gustave Piganeau, Sir R. Hill, Mrs. F. W. Sandford, Hugh Dickson, and Alfred Colomb; 2nd, KING'S ACRE NURSERY Co., LTD., Hereford, who had exquisite flowers of Mildred Grant, Mrs. W. J. Grant, Lyon Rose, Mrs. Sharman Crawford, Heinrich Schultheis, Earl of Warwick, John Ruskin, and Killarney; 3rd, Mr. W. H. FRETTINGHAM, Beeston, Nottingham.

Messrs. HARKNESS & Co. also gained 1st prize in a class for 48 blooms. A few of their flowers were disfigured and past their best, but those mentioned below were of first-rate quality:—Capt. Hayward, Dr. Andry, Mrs. W. J. Grant, Horace Vernet, Mme. Eugene Verdier, Ulrich Brunner, Mrs. Theodore Roosevelt, Alfred Colomb, and Dean Hole. 2nd, THE KING'S ACRE NURSERY Co., with shapely flowers of Gustave Piganeau, George C. Waud, Elizabeth Barnes, Ben Cant, Rhea Reid, Duke of Albany,

Mme. Melanie Soupert, William Shean, Bessie Brown, Lady Ursula, J. B. Clark, Joseph Hill, John Cuff, Dr. O'Donel Browne, Rhea Reid, Earl of Warwick, and Mildred Grant. 2nd, Messrs. R. HARKNESS & Co., whose best flowers were J. B. Clark, Lyon Rose, Mme. M. Soupert, and Mrs. Theodore Roosevelt. 3rd, Mr. W. T. MATTOCK, Headington, Oxford.

The last-named exhibitor had the best 24 Tea or Noisette Roses. His blooms of Mrs. Edward Mawley, Maman Cochet, Bridesmaid, and Catherine Mermet were very meritorious. 2nd, Mr. W. H. FRETTINGHAM, who had a particularly good bloom of Molly Sharman Crawford.

The best dozen white Roses (one variety) was Frau Karl Druschki, exhibited by Messrs. R. HARKNESS & Co. Blooms of the same variety gained 2nd and 3rd prizes for THE KING'S ACRE NURSERY Co., LTD., and Messrs. PERKINS & SONS respectively.

The last-named firm had the best 12 blooms of any yellow variety in Mme. Melanie Soupert.



FIG. 20.—HYBRID TEA ROSE "MRS. DAVID JARDINE": COLOUR OF FLOWER, PINK.

Prince Camille de Rohan, Florence Pemberton, and Ulrich Brunner. 3rd, Mr. W. H. FRETTINGHAM.

The 1st, 2nd, and 3rd prizes in the next class, which was for 36 varieties, three blooms, were won by the last-named exhibitors in the order named.

The best dozen Roses introduced during the years 1908, 1909, and 1910 came from Mr. W. H. FRETTINGHAM. The varieties were as follows:—Grace Molyneux, Miss Cynthia Ford, Rhea Reid, Molly Sharman Crawford, Mrs. David Jardine (see fig. 20), John Cuff, Mrs. P. H. Coats, George C. Waud, Mr. W. Smith, Dr. O'Donel Browne, Florence Coulthwaite, and Lady Ursula.

Of the six competitors in a class provided for 24 hybrid Teas, distinct, Messrs. PERKINS & SONS, Coventry, were awarded 1st prize for handsome blooms, among which the undermentioned varieties were prominent:—Mrs. David McKee, Marquise Litta, Lyon Rose, Liberty, Dean Hole,

2nd, Mr. W. T. MATTOCK; 3rd, Mr. W. H. FRETTINGHAM.

Mrs. John Laing, exhibited by Mr. W. H. FRETTINGHAM, was the best pink-flowered Rose. Flowers of the same variety gained 2nd prize for Messrs. R. HARKNESS & Co., who took the lead in the class for 12 red or crimson Roses. They had splendid blooms of Ulrich Brunner. 2nd, Mr. FRETTINGHAM, also with Ulrich Brunner.

There were five exhibits in a class provided for dinner-tables, each 8 feet by 4 feet, decorated with Roses and foliage only. Plants in pots were allowed. The 1st prize was awarded to Mr. W. T. MATTOCK, Headington, Oxford, for a very pretty table. The centre stand contained blooms of Irish Elegance, and pale pink single flowers were used in smaller receptacles. Long sprays of dark-coloured Rose foliage completed a charming combination of colours. 2nd, Messrs. J. TOWNSEND & SONS, Worcester; 3rd, Mr. CHARLES HOLDER, Erdington.

SWEET PEAS.

Although Sweet Peas were not extensively shown, the quality of the flowers was of a very high order of merit. Of the six contestants in a class for 12 varieties of Sweet Peas, Mr. W. CHIPMAN, Erdington, won 1st prize. 2nd, Mr. STEPHEN SIMS, Borrowash. 3rd, Mr. W. MARPLE, Penkridge.

In Mr. H. Eckford's class for 12 varieties, there were three exhibits, and the 1st prize was well won by Mr. ROBERT MADELEY, Market Drayton, whose collection of strong-stemmed, big-petalled flowers included the following varieties:—Constance Oliver, Evelyn Hemus, Etta Dyke, John Ingman, Queen of Norway, Mrs. Henry Bell, and Frank Dolby. 2nd, Mr. J. BOWLER, Market Drayton.

Messrs. Baker's prizes were offered for six varieties: 1st, Mr. ROBERT MADELEY; 2nd, Mr. J. BOWLER. Both exhibitors showed beautifully fresh flowers of the best quality.

Messrs. Webb & Sons offered prizes for six varieties. The 1st prize was awarded to Mr. J. BOWLER, who showed superb flowers of Enchantress, John Ingman, and Evelyn Hemus.

MISCELLANEOUS CUT FLOWERS.

In a class for hardy perennials (shrubs excluded), occupying table space of 16 feet by 4 feet, four good exhibits were set up. The 1st prize of £10 was won by Messrs. HARKNESS & SONS, Bedale, who showed a handsome collection, in which English and Spanish Irises, Gailardias, Campanulas, Iceland Poppies, Gladioli, Inula glandulosa, and Delphiniums were noteworthy. 2nd, Messrs. J. GIBSON & Co., Bedale, with a good selection, but not very well arranged. 3rd, Messrs. W. ARTINDALE & SON, Sheffield.

There were 10 tables, each 8 feet by 4 feet, decorated with flowers (Roses excluded). The 1st prize table consisted of lovely pale pink Carnations, on long stems, also Gypsophila and Lilies of the Valley, relieved with Codium leaves, Smilax, and Selaginella sprays; shown by Mr. ALEC J. BLAIR, Bashford, Stoke-on-Trent. The 2nd award went to Mr. STEPHEN SIMS, Borrowash, who used pink and lavender-coloured Sweet Peas. 3rd, Mr. T. W. MATTOCK, Oxford.

The best display of floral designs came from Messrs. M. JENKINSON & SON, Newcastle, Staffs., whose collection was very comprehensive and exceedingly well executed. 2nd, Messrs. LEWIS & SPROSON, Shelton, Hanley; 3rd, Mr. A. CARR, Cheadle.

FRUIT.

The premier class was one for a collection of fruit, not exceeding 14 dishes, to be shown on separate tables measuring 10 feet by 4 feet 6 inches, decorated with flowers and foliage. Plants in pots were allowed, but Orchids, silver, electro-plate, and glasses were excluded. Four exhibits were placed before the judges, who awarded 1st prize to the Earl of HARRINGTON, Elvaston Castle, Derby (gr. Mr. J. H. Goodacre, V.M.H.), for a beautifully-decorated table. The dishes exhibited were as follow:—Belgarde and Dymond Peaches, Spencer Nectarine, Golden-gage Plum, Appley Towers, Muscat of Alexandria, Foster's Seedling and Black Hamburg Grapes, Lady Sudeley Apples, Dr. Jules Guyot Pears, and two Melons. The decorations consisted of Schizanthus, Heucheras, and Francoas, relieved with grasses and sprays of Selaginella. J. DRAKE, Esq., Orford House, Market Rasen (gr. Mr. W. Parker), gained 2nd prize. 3rd, Lady BEAUMONT, Carlton Towers, Yorks. (gr. Mr. W. Nicholls).

Collection of 12 dishes.—This collection was to include not fewer than eight kinds, and not more than two varieties of a kind; black and white Grapes to be represented; to occupy a space of 6 feet by 4 feet. Each collection to be decorated with flowers and foliage. The 1st prize was again awarded to the Earl of HARRINGTON, Elvaston Castle (gr. Mr. J. H. Goodacre), who showed Peaches, Nectarines, Strawberries, Plums, Muscat of Alexandria and Black Hamburg Grapes, one Pine, and one Melon, all in first-rate condition. The flowers used for decoration consisted of Ivy-leaved Pelargoniums, Francoas, and Gypsophila, and were displayed in six vases. 2nd, J. DRAKE, Esq.

Collection of 6 dishes. to include two bunches of black or white Grapes.—Of the two exhibits in this class, the one from Lord BAGOT, Blith-

field Hall, Rugeley (gr. Mr. T. Bannerman), was the better. It consisted of good Peaches, Nectarines, Figs, Grapes, Strawberries, and one Melon. 2nd, Mr. N. BUXTON, Gedling, Notts.

The Earl of HARRINGTON showed the best four bunches of Grapes—two black and two white, in well-finished samples of Muscat of Alexandria and Black Hambro'. 2nd, J. DRAKE, Esq., Market Rasen (gr. Mr. W. Parker).

The last-named exhibitor won 1st prize in a class for two bunches of Black Hambro' Grapes; 2nd, Lady BEAUMONT, Carlton Towers, Yorks. (gr. Mr. W. Nicholls).

Lady BEAUMONT led in the next class for two bunches of Black Grapes (Hambro's excluded). The variety exhibited was Madresfield Court. 2nd, J. DRAKE, Esq., Market Rasen (gr. Mr. W. Parker).

The Earl of HARRINGTON won 1st prize in classes for (1) two bunches of White Muscat Grapes; (2) two dishes of Nectarines; (3) one green-fleshed Melon; and (4) one dish of Cherries.

J. DRAKE, Esq. (gr. Mr. W. Parker) was awarded 1st prizes for (1) two bunches of white Grapes (Muscats excluded); (2) one scarlet-fleshed Melon; and (3) 12 Tomatoes.

Lord BAGOT (gr. Mr. T. Bannerman) led in a class for six Nectarines, and in another for a white-fleshed Melon. He also had the winning dish of eight Figs.

Mr. N. BUXTON, Gedling, beat five contestants in a class for two dishes of Peaches, distinct varieties.

VEGETABLES.

For Messrs. Sutton & Sons' prizes for six distinct kinds of vegetables only two exhibits were staged. The 1st prize was awarded to Lady BEAUMONT (gr. Mr. W. Nicholls), who showed excellent Cauliflowers, Peas and Tomatoes; 2nd, T. TAMS, Esq. (gr. Mr. A. H. Ruff), whose produce was poor, especially Cauliflowers, and indifferently set up.

Messrs. Webb & Sons' prizes.—The 1st prize was won by Lady BEAUMONT (gr. Mr. W. Nicholls), who showed a very good collection, consisting of Early Mammoth Cauliflower, Stourbridge Glory Potato, Stourbridge Marrow Pea, New Standard Carrot, Monster White Tri-poli Onion, and a dish of unnamed Tomatoes; 2nd, Mr. A. H. HICKMAN, Cookley; 3rd, Mr. N. BUXTON, Gedling.

In a class for a collection of nine distinct kinds of vegetables, Lady BEAUMONT was again to the fore with a handsome lot; 2nd, Mr. N. BUXTON, Gedling, Notts.

NON-COMPETITIVE EXHIBITS.

Messrs. JARMAN & Co., Chard, Somerset, showed Roses, Sweet Peas, Zonal Pelargoniums, Carnations and Centaureas (Silver Medal); Mr. HENRY ECKFORD, Wem, a large collection of Sweet Peas (Small Gold Medal); Messrs. CLIP-RAN & SONS, Altrincham, a group of foliage and flowering shrubs (Silver Medal); Mr. H. N. ELLISON, West Bromwich, a collection of small Ferns (Silver Medal); Messrs. WEBB & SONS, Stourbridge, an exhibit of choice flowers, fruit and vegetables (Large Gold Medal and Silver Cup); Mr. W. L. PATTISON, Shrewsbury, a collection of Violas (Silver Medal); and Messrs. DICKSON'S, Chester, an assortment of hardy herbaceous flowers and Roses (Small Gold Medal).

CERTIFICATE OF MERIT.

Sweet Pea "Federation."—This is a large, bright, rose-coloured variety of good substance. (Shown by Mr. W. MARPLE, Penkridge.)

WOLVERHAMPTON FLORA FETE.

JULY 12, 13, 14.—Although the number of entries were not quite so numerous as last year, when special efforts were made to celebrate the attainment by the society of its majority, this year's show ranks amongst the best held in the beautiful West Park. The weather was glorious, and the attendance on the opening day was very large. Although it was hot and close in the tents, the gangways were so spacious that visitors were not inconvenienced by crowding. The groups of plants, rock-garden exhibits, and Roses were the principal features of the exhibition.

GROUPS OF PLANTS.

The groups were arranged in an exceptionally large marquee, there being ample room for the

proper display, and the canvas was not heavy, so that the brightly-coloured foliage and flowers showed up well.

The principal class was for a group of plants in or out of bloom, occupying a space of 30 feet by 12 feet. There were four exhibits that ran the whole length of the centre of the tent, presenting a front of unusual beauty of flower and leaf. It was no "run-away" competition, for although Messrs. J. CYPHER & SONS, Cheltenham, were rightly placed 1st, each of the displays merited warm approval. Messrs. CYPHER's group had an undulating front, a bank of Orchids, set in variegated Vitis, Codiaums, Asparagus plumosus, and surmounted by a Cocos Palm forming a centre-piece; on either side of this, there were arches decorated with Pink Carnations, and suitable groups were displayed at the corners. The general body of the exhibit was comprised of Dracaenas, Begonias, Codiaums, Caladiums, Anthuriums, Clerodendron fallax, and Kalanchoe flammula, broken at points with banks of Lilies, a tall, graceful Humea or a plant of Papyrus, and with overhanging sprays of Oncidium. The front was bright with Nertera depressa in fruit, Caladium argyrites, Heliconia illustris, Ferns, and other handsome-leaved subjects. The 2nd prize was awarded to Sir GEORGE H. KENRICK, Birmingham (gr. Mr. J. Macdonald). Banks of finely-flowered White Phlox-nopsis set in a bronzy-leaved Selaginella were prominent in this group, which contained a wealth of finely-grown foliage plants, but the group needed a few more showy flowers to brighten it. The groundwork and front were remarkably effective; 3rd, Mr. W. A. HOLMES, Chesterfield; 4th, Mr. W. VAUSE, Leamington.

There was another class for a group of plants, but flowers were not permitted. The area was smaller (250 square feet), and the height was restricted to 8 feet. The best of three groups was put up by Messrs. CYPHER, who employed finely-coloured Codiaums with good effect, and beneath them Caladiums, Ferns, Aralias, Alocasias, Coleuses, Palms, and many other plants of attractive leafage; 2nd, Mr. W. A. HOLMES, Chesterfield, who showed fine examples of the rose-tinted Ananas sativa (Pineapple) and some good Codiaums, but the group was not so richly coloured as the 1st prize exhibit; 3rd, Mr. W. VAUSE, Leamington.

Three exhibitors showed in the class for a collection of decorative plants and bunches of cut flowers arranged on tabling. The displays were only medium, the 1st prize being awarded to Messrs. BASTOCK & SON, Moseley, Birmingham.

Considerable latitude was permitted in the class for a group of flowering plants of one kind only. Any subject was permissible, and the method of arrangement was left to the taste of the exhibitor. There were six exhibits, two of Begonias, two of Carnations, and one each of Hydrangea hortensis and Erica. The Begonias shown by Mr. F. DAVIS, Pershore, and Messrs. BLACKMORE & LANGDON, Bath, were awarded the 1st and 2nd prizes in the order named; the Ericas, shown by Messrs. JAS. CYPHER & SONS, being placed 3rd. The Begonias were shown grandly in both instances.

For a collection of Caladiums in not fewer than six distinct varieties, there were two entries, but neither was considered worthy of the 1st prize.

Coleuses were shown by only one exhibitor, F. SIMPSON, Esq., Perton Grove, Wolverhampton (gr. Mr. W. B. Burchill), but they were good, and worthy of the 1st prize, which they received.

Begonias were not extra good in the class for 12 plants, open only to amateurs, the best of three displays being shown by B. H. MAUNDER, Esq., Trysull (gr. Mr. C. Weaver).

Some good Gloxinias were shown by F. SIMPSON, Esq., in the class for 12 plants in the amateurs' classes.

The best six vases of Carnations were shown by the Duke of NEWCASTLE, who had blooms of Princess of Wales, Duchess of Westminster, H. J. Jones, Prime Minister, Old Blush, and Maggie Hodgson. 2nd, Lady GREY, Stourbridge, with remarkably long-stalked flowers and extra vigorous foliage.

In the class for 20 plants in pots not exceeding 8 inches in diameter, there were three exhibits. The schedule stipulated that not fewer than eight of the specimens should be in flower. Mr. W. VAUSE was placed 1st with, principally, Ixora Duffii and varieties of Codium. 2nd,

Messrs. J. CYPHER & SONS, with greater variety, including *Allamanda Hendersonii* and *Acalypha Sanderiana*.

The best group of plants arranged for effect in the amateurs' classes was exhibited by Mr. H. WAKEMAN, Wolverhampton.

ROCK-GARDEN EXHIBITS.

There were three of the large rock-garden exhibits which have become so popular at provincial shows. Each was allowed an area of 25 feet by 12 feet. Messrs. J. BACKHOUSE & SONS, LTD., York, were awarded the 1st prize for a realistic design, with rockery of large stones, a winding path leading by a pool of water that was planted with *Nymphaeas* and other Water Lilies. A stream trickling down one corner ran beneath a rustic bridge. The outlying parts were surmounted with tall-growing, graceful, shrubby species, the crannies of the rockery being planted with a great assortment of alpine and border flowers. 2nd, Mr. J. E. KNIGHT, Tettenhall Nurseries, Wolverhampton, with a well-arranged exhibit, including a pretty water pool, the stones being draped with Alpines in flower. 3rd, Messrs. W. ARTINDALE & SONS, Sheffield.

ROSES.

Roses were a strong feature of the show. The largest class was for 72 blooms of distinct varieties. This attracted five exhibitors. Mr. HUGH DICKSON, Belfast, led with a notable collection of fine, highly-coloured blooms, including grand flowers of *Lohengrin*, *Dean Hole*, *Hugh Dickson*, *Comtesse de Ludre*, *Leslie Holland* (grand), *Mildred Grant*, *Ulster*, *Konigin Carola* and *Marquise Jeanne de la Chataigneraye*; 2nd, KING'S ACRE NURSERY Co., Hereford. We noticed a remarkably fine bloom of *Mildred Grant* in this collection; 3rd, Messrs. R. HARKNESS & Co., Hitchin.

There were six exhibits in the class for 48 distinct varieties, the competition being close. Messrs. HARKNESS were placed 1st, having well-matched, brightly-coloured flowers of *J. B. Clark*, *Alice Lindsell*, *Mme. Jos. Bonnaire*, *Prince Arthur*, *Lyon Rose*, *Ellen Drew*, *Duke of Edinburgh*, and others; 2nd, Mr. HUGH DICKSON, Belfast; 3rd, Messrs. J. TOWNSEND & SON, Worcester.

Some good blooms were seen in THE KING'S ACRE NURSERY Co.'s exhibit of 12 varieties shown in triplets, this firm beating four other exhibitors, Messrs. J. TOWNSEND & SON, Worcester, and Messrs. R. HARKNESS & Co., Hitchin, winning the 2nd and 3rd prizes in the order named. A selection of the best flowers in the premier stand includes *Mildred Grant*, *Duke of Teck*, *Alfred Colomb*, *Gustave Piganeau*, and *Mrs. John Laing*.

For 24 distinct varieties, shown as single blooms, there was a good competition amongst seven growers, the 1st prize being secured by Mr. W. T. MATTOCK, Headington, Oxford. Some of the outer petals in his flowers showed damage by rain. Mrs. Ed. Mawley, *J. B. Clark*, Mrs. J. Laing, *Earl Dufferin*, *La France* (89) (bright rose), and *White Maman Cochet* are a selection of Mr. MATTOCK's best varieties. 2nd, Messrs. PERKINS & SONS, Coventry; 3rd, KING'S ACRE NURSERY Co.

An interesting class was that for 12 blooms of new varieties sent into commerce since 1907. In this THE KING'S ACRE NURSERY Co. easily led, having *Lady Ursula*, *Joseph Lowe*, Mrs. E. J. Holland, *Walter Speed*, *Pie X.*, *Lyon Rose*, *His Majesty*, Mrs. Harold Brocklebank, Col. R. S. Williamson, *White Killarney*, *Rhea Reid* (remarkably fine), and *Margaret*; 2nd, Mr. HUGH DICKSON, the varieties Mrs. Stewart Clark and *Mark Twain* being especially good; 3rd, Messrs. FRANK CANT & Co.

The best 12 blooms of a dark Rose were of the variety *Hugh Dickson*, shown by the raiser. Messrs. FRANK CANT & Co. excelled in the class for 12 light Roses with the variety Mrs. Theodore Roosevelt; whilst Mr. W. T. MATTOCK showed the best Tea Roses in 12 varieties.

Although not more than three exhibitors contested in the class for a display of decorated Roses, this made a fine class, the quality of each collection being splendid. The 1st prize was awarded to Mr. JOHN MATTOCK, who showed superb bunches of *Edu Meyer*, *Papillon*, *Lady Roberts*, *Mme. Abel Chatenay*, *Blush Rambler*, *Countess of Gosford*, *Mme. Melanie Souper* (exceptionally good), *Mme. Antoine Mari*, *Hebe's Lip*, *Richmond* and *Marie Van Houtte*; 2nd, Mr.

W. T. MATTOCK, Oxford; 3rd, Mr. JOHN BARROW, Oadby, Leicester, who had a vase of the rich *Ecarlaté* of a shade approaching scarlet.

In the classes restricted to amateurs, R. FOLEY HOBBS, Esq., Worcester, had the winning stand of (1) 36 varieties, of (2) six varieties, shown in triplets, and of (3) 12 varieties, distinct, but he was 2nd to J. A. L. FELLOWES, Esq., Attleborough (gr. Mr. J. O. Hinckley), in the class for 24 varieties, who followed Mr. HOBBS in the class for 12 varieties.

Mr. FELLOWES excelled in the class for 12 Tea Roses, whilst Mr. J. EGGINTON, Wolverhampton, showed best in the class for 18 varieties.

There were numerous classes for Roses in the amateurs' section, the principal prizewinner being Mr. F. A. GEORGE, Worcester, who excelled for 18 varieties and for 12 varieties, Mr. W. MOSELEY, Wolverhampton, being 2nd in the former and Mr. SHORTHORSE, Hammerwich, in the latter class.

Some pretty exhibits were seen in the class for a vase of Roses, Miss E. A. DAVIS, Pershore, excelling with a tall stand of first-rate blooms, red and white kinds intermixed.

HARDY FLOWERS.

Although these were not so numerous as at some other provincial shows, the quality of those displayed was excellent, especially in the class for a group arranged on a table space of 15 feet by 5 feet. There were three exhibits in this class, the 1st prize being won by Messrs. Wm. ARTINDALE & SON, Sheffield, for a choice display, which did not contain a duplicate bunch; 2nd, Messrs. HARKNESS & SONS, Bedale.

Hardy flowers were also well shown in the class from which traders were excluded, bold vases of *Gaillardias*, *Irises*, *Lupins*, *Mallows*, *Aconitums*, *Campanulas* and others being shown by Mr. C. HOLDER New Oscott, who was placed 1st, the 2nd prize being won by Lieut.-Col. C. T. MAUDE, Tettenhall Wood (gr. Mr. Simpson), whose vase of *Irises* was magnificent.

In the class for a collection of hardy flowers, open only to amateurs, there were three exhibits. Mr. HOLDER again showed grandly, and was awarded the 1st prize, being followed by F. BOUSKELL, Esq., Nuneaton (gr. Mr. G. Holles).

Delphiniums, in a class for a collection of these flowers, made a brilliant display, Messrs. BLACKMORE & LANGDON, Bath, winning the 1st prize, followed by Messrs. HARKNESS & SONS.

The best display of *Pansies* and *Violas* was shown by Mr. W. PEMBERTON, Bloxwich, who had a very pretty group of these border flowers.

SWEET PEAS.

In the Society's class for a collection of 18 varieties there were four exhibits, the best being displayed by G. H. F. ROBERTSON, Esq., Gresford (gr. Mr. E. Jones), who showed grandly, having *Dorothy Tennant*, *Triumph* (Spencer), *George Herbert*, *Asta Ohn*, *Etta Dyke*, *Tom Bolton*, and other well-known sorts; 2nd, Mr. W. MARPLE, Penkridge.

In Mr. Henry Eckford's class for 12 varieties, Mr. ROBERTSON was again easily 1st, followed by Mr. A. H. HICKMAN.

Messrs. Robert Sydenham, Ltd., also offered prizes for a collection of 12 distinct kinds, and again Mr. ROBERTSON easily out-distanced his rivals.

In Messrs. Sydenham's class for six varieties, the 1st prize was won by Dr. J. E. PHILLIPS, Malpas (gr. Mr. W. Maiden), in a strong competition. This exhibitor also excelled in Messrs. Bakers' class for 12 kinds.

Messrs. Ed. Webb & Sons offered prizes for six bunches, in which Mrs. CHAPPELL, Westbourne Hall, Warminster, carried off the 1st prize.

FRUITS AND VEGETABLES.

In the class for a collection of six varieties of fruits, from which traders were excluded, there were three entries, a magnificent collection shown by the Duke of WESTMINSTER, Eaton Hall (gr. Mr. N. F. Barnes), being awarded the 1st prize. A dish of *Apple Lady Sudeley* was remarkably fine. There were also very choice dishes of *Williams's Bon Chrétien Pears*, *Pineapple Nectarines* (intensely coloured), *Grapes Madresfield Court* and *Muscat of Alexandria*, with a large Melon of *Hero of Lockinge* variety. 2nd, Duke of NEWCASTLE, Worksop (gr. Mr. S. Barker).

The Duke of WESTMINSTER also won the 1st

prize in the open class for a collection of fruits, being followed by J. DRAKES, Esq., Market Rasen (gr. Mr. W. Parker).

Grapes were not a strong class. The Duke of NEWCASTLE won the 1st prize for four bunches, his best examples being *Buckland Sweetwater* and *Black Hamburg*, both heavy bunches.

The best Melons, both green and scarlet-fleshed, were shown by Mr. MUNTZ.

The Duke of NEWCASTLE excelled with *Peaches* and *Nectarines*; whilst Lord HATHERTON, Penkridge (gr. Mr. H. Taylor), had the best *Strawberries* in *Bedfordshire Champion*.

THE KING'S ACRE NURSERY Co., Hereford, were the only exhibitors in the class for a display of fruit trees in pots, receiving the 1st prize. They showed a circular group on a dais, having trained *Gooseberries*, *Cardinal Nectarines*, *Blue Rock Plums*, *Beauty of Bath Apple*, *Souvenir du Congrès* and *Pitmaston Duchess Pears*, and *Figs*, *Grapes*, and other kinds.

VEGETABLES.—In the society's class for a collection of 10 kinds, there were four entries, two being of outstanding merit, exhibited by the Duke of PORTLAND, Welbeck Abbey (gr. Mr. Jas. Gibson), and the Marquis of NORTHAMPTON, K.G., Northampton (gr. Mr. A. R. Searle), who were placed 1st and 2nd respectively, F. E. MUNTZ, Esq., Hockley Heath (gr. Mr. H. S. Foster), being 3rd. The 1st and 2nd prize groups were very close in regard to quality. Mr. Gibson had splendid *New Intermediate Carrots*, *White Leviathan Onions*, *Canadian Wonder Beans*, *Globe Beet*, *Matchless Cucumbers*, and *Centenary Peas*. The Marquis of NORTHAMPTON's strongest dish was of *Duke of Albany Peas*, which were superb. He had also choice *Tomatoes*, *Onions*, *Carrots*, and *Cauliflowers*.

The Marquis of NORTHAMPTON won the 1st prize in Messrs. Webb's class for eight kinds; and Mr. H. WATSON SMITH, Stourbridge (gr. Mr. H. Davis), excelled in this firm's class for six kinds.

Messrs. Sutton and Sons also offered prizes for six kinds, the 1st prize falling to the Duke of PORTLAND (gr. Mr. Gibson); 2nd, Marquis of NORTHAMPTON.

The Duke of NEWCASTLE showed the best two bunches of *Money-maker Tomato* in the class in which the prizes were offered by Messrs. Dickson & Robinson, Manchester.

AWARDS.

First-class Certificates were awarded to *Sweet Peas Sunproof Crimson*, *Edrom Beauty*, *Masterpiece*, Mrs. H. Dickson, and *Earl Spencer*, all exhibited by Messrs. DOBBIE & Co.; also to *Viola Moseley Perfection*, of a canary gold colour, shown by Messrs. BASTOCK & SON, Moseley.

An Award of Merit was granted to *Chrysanthemum A. Welham*, a double-flowered, creamy-yellow *Marguerite*. Shown by Mr. A. WELHAM, Bridgenorth.

NON-COMPETITIVE EXHIBITS.

Messrs. SUTTON & SONS, Reading, put up a remarkably pretty exhibit of flowers, fruits and vegetables, representing choice produce from their strains of seeds. Melons were represented by 100 fruits in 60 varieties, embracing several promising seedlings. The vegetables were of high quality throughout, *New Red Intermediate Carrots* being especially good. (Special Gold Medal.)

Messrs. CLIBRANS, LTD., Altrincham, arranged a bank of pillar Roses with groups of *Hydrangeas* and a new golden-leaved *Elder* in front. They had also *Ivies* in variety, *Aralia sinensis alba*, ornamental vines and other subjects. (Silver Medal.)

Some of the best *Carnations* we have observed at exhibitions were staged by Lady GREY, Enville Hall, Stourbridge (gr. Mr. F. Green). The plants were remarkable for the vigour of foliage and their general good culture. (Gold Medal.)

Messrs. Ed. WEBB & SONS, Wordsley, Stourbridge, filled two large tables with flowers, fruits and vegetables, an alcove of *Sweet Peas* joining the two. *Gloxinias*, *Sweet Peas*, *Delphiniums*, *Liliums*, and other flowers brightened the general effect. (Special Gold Medal.)

Mr. EDWIN MURRELL, Shrewsbury, had an assortment of Roses, including some excellent blooms of the beautiful *Lyon Rose*. (Silver Medal.)

Messrs. JARMAN & Co., Chard, staged an effective group of Roses, *Sweet Peas*, *Zonal Pelargoniums* and *Centaureas*. (Silver Medal.)

Messrs. ROBT. SYDENHAM, LTD., Birmingham, arranged a delightful display of Sweet Peas, set up in silver-plated table stands. (Silver Medal.)

Messrs. DOBBIE & Co., Edinburgh, had a remarkably fine show of Sweet Peas in about 50 varieties; also a selection of Pansies and Violas. (Special Gold Medal.)

Messrs. DICKSONS, Chester, showed Roses and border flowers, having a good selection of each. We noticed a splendid group of *Lilium Brownii* var. *odorum* in this group. (Gold Medal.)

Mr. C. H. HERBERT, Acocks Green, Birmingham, showed perpetual-flowering Pinks, the variety Progress being of rosy-mauve colour. (Silver Medal.)

Messrs. WM. ARTINDALE & SONS, Sheffield, had a very large collection of Pansies and Violas, with arches of Rambler Roses in front and vases of *Gladioli* between. (Silver Medal.)

Sweet Peas were shown by Messrs. W. H. SIMPSON & SONS, Birmingham, who also showed a new system of raising Sweet Peas in deep, square boxes of cardboard, each of which is planted with a single seed. (Silver Medal.)

Mr. C. F. WATERS, Balcombe, Sussex, showed a group of Carnations, having both border and perpetual-blooming varieties. (Silver Medal.)

Mr. H. LEE, Wolverhampton, also showed Carnations. (Bronze Medal.)

A Silver Medal was awarded to the WOLVERHAMPTON CORPORATION (gr. Mr. A. Webster), for a group of flowering plants that contained a wealth of beautiful foliage and flowering subjects.

Floral devices were shown by Messrs. E. & H. SICKLING, Wolverhampton. (Gold Medal.)

Mr. CHAS. BARNETT, Albrighton, near Wolverhampton, had bunches of Tomatos and vases of hardy flowers. (Bronze Medal.)

Mr. H. N. ELLISON, West Bromwich, exhibited a group of Ferns, including plumose varieties of *Nephrolepis exaltata*. (Silver Medal.)

Mr. GEO. E. BROWN, Wolverhampton, showed a miscellaneous exhibit of tools, garden sundries, tents, ladders, summerhouses and other garden furniture.

CASTLE'S, LTD., Westminster, displayed garden seats and tables, made from teak wood of old ships.

Messrs. READE BROTHERS & Co., LTD., Wolverhampton, exhibited fertilisers, weed-killers, and insecticides.

Messrs. F. C. HILL, LTD., Wolverhampton, showed garden seats and summerhouses.

Messrs. TOM B. DOBBS & Co., Wolverhampton, set out a garden design with groups of flowers and shrubs, enclosing it with a rustic fence. A rosary occupied the centre, and there was a "wishing" well in one corner. The whole was fenced by Larch palings, there being numerous entrances, each spanned with a rustic arch. (Silver Medal.)

Mr. THOS. RICKHUSS, Wolverhampton, showed garden furniture; Mr. JOHN E. KNIGHT, Wolverhampton, displayed rustic arches, garden seats, pillars of rustic work for Roses, with beds of scarlet *Pelargoniums*, and a few other flowers. Mr. GEORGE HILL, Wolverhampton, displayed a large group of various articles of use in gardens, such as summerhouses, barrows and ladders.

BRIGHTON ROSE AND HORTICULTURAL.

JULY 5, 6.—The Brighton Rose and Sweet Pea exhibition was held in the Dome and Corn Exchange on the above dates. It was a great improvement on the show of previous years, both in entries and gate money, whilst the flowers were much better than last year.

In a class for a group of Roses, either plants or cut flowers, Messrs. G. MOUNT & SONS, Canterbury (the winners of last year), and Mr. G. W. PIPER, Uckfield, were close contestants. Both exhibits were much admired, the premier award going to Messrs. G. MOUNT & SONS. This firm were the only exhibitors in the class for a smaller group.

For 48 blooms, distinct, Mr. FRANK WOOLLARD, Lewes Road Nursery, Brighton, was 1st, with a fairly clean lot of blooms. Lyon Rose, Mrs. John Laing, and Queen of Spain were good.

E. M. EVERSFIELD, Esq., Denne Park, Horsham, was well ahead of Mr. F. WOOLLARD for 36 varieties. The winner had good flowers of Mrs. Theodore Roosevelt; in fact, this was shown as well as any variety in several classes. Messrs. MOUNT & SONS were 3rd in this class.

E. M. EVERSFIELD, Esq., had the best 24 Teas and Noisettes, showing good flowers, but, like the Sweet Peas, much bruised by the recent winds.

Some very tasteful tables of Roses were shown. Mr. J. BOX, Lindfield, won the 1st prize, followed by Mr. G. W. PIPER, Uckfield. Mr. E. W. MORRIS, a rising amateur from Uckfield, was 1st in three classes for Roses.

Some good Carnations came from Mr. C. T. WATERS, Balcombe, who also showed the best Sweet Peas.

For a ball-room and bride's bouquet of Roses, Mr. F. WEBBER, Tonbridge, and Miss KATE JAMES, Bedford Street, Brighton, won the best prizes.

Baskets of Sweet Peas were a feature. Mrs. RAPLEY, Warblington House, Havant, was placed 1st in a strongly-contested class. The best white Sweet Peas, 30 spikes, came from Mr. W. H. SMITH, George Street, Hailsham. O. E. D'AVIGDOR GOLDSMID, Esq., Somerhill, Tonbridge, showed the best Grapes.

CROYDON HORTICULTURAL.

JULY 6.—The forty-third summer exhibition, held in the Park Hill recreation ground, was not quite so good as usual. Roses were fewer than last year, Messrs. E. J. HICKS, Twyford, Berks., being almost the only trade exhibitor. He won the 1st prize for 48 blooms, distinct, with good flowers, Duchess of Bedford, Lyon, and White Killarney being among the better flowers. Mr. HICKS was also awarded the 1st prize for 18 Teas and Noisettes, excellent blooms of Mrs. E. Mawley and Muriel Grahame, the latter very highly coloured, being in this stand.

For 12 blooms of one variety, Mr. HICKS was successful, with well coloured Lyon Rose, followed by Mr. J. JEFFERIES, Colwyn Road, with some clean Frau Karl Druschki. Mr. JEFFERIES won the 1st prize for 24 blooms distinct; O. Terke and Earl of Duferin were the best blooms. Mr. HICKS was also 1st for the best 12 blooms of one variety, showing Mme. Jules Gravereaux, followed by Mr. JEFFERIES with *Souvenir de Petite*, Nottingham.

H. L. METHEN, Esq., took the 1st honours for nine blooms distinct, and C. ASHERBY, Esq., Blenheim Gardens, Wallington, was 1st for six blooms. This exhibit contained a Gold Medal winner in Mrs. Theodore Roosevelt.

In the local classes, H. L. METHEN, Esq., Sandstead, was successful for six hybrid perpetuals, for six Teas, and for six blooms of any one variety, winning in the latter class with very good examples of *Caroline Testout*. It was disappointing to see so few Roses, more especially as a large number of competitors had entered.

Some of the groups of plants were good, the largest group, arranged for effect, coming from E. W. COLES, Esq., Caterham (gr. Mr. C. Lane), who also had the best table of plants and flowers. For 24 bunches of hardy cut flowers, grown in the open, Miss WILLIAMS, Duppas Hill, Croydon (gr. Mr. G. Lewry), won the 1st prize.

BRITISH GARDENERS' ASSOCIATION. (LONDON BRANCH.)

JULY 9.—On this date, members of the London branch paid a visit to the Priory Gardens, Rehampton, by invitation of the head gardener, Mr. D. Campbell.

The party were met by Mr. Campbell at Barnes Station, and conducted to the cricket grounds, where a match had been arranged between the Priory team and the B.G.A.

The game was declared closed at 5.30, and members assembled to a tea which had been laid under the spreading branches of a clump of Elms.

A tour of inspection through the Priory ground followed. Mr. Campbell, assisted by his foreman, Mr. Smith, pointed out the many interesting features of the gardens. The plants in the pleasure ground and flower gardens were full of interest and beauty.

A short visit was also paid to "The Grove," the residence of Captain Wilson. The head gardener, Mr. MacClean, invited members to see these beautiful grounds whilst they were in the neighbourhood. Conspicuous amongst the many interesting features of these gardens was a collection of perpetual-flowering Carnations.

SOUTHAMPTON HORTICULTURAL.

JULY, 5, 6.—The annual summer show was held in the county cricket ground, and was a distinct success. Roses, Sweet Peas and vegetables were strong features. Trade exhibits added materially to the interest of the show.

ROSES.

In the open classes for Roses, the leading one was for 48 blooms, distinct. Four competed, the best, a level lot of blooms, being shown by Messrs. D. PRIOR & SON, Colchester. Oberhofgartner Terke, Mrs. T. Roosevelt, Dean Hole, Maurice Bernardin, White M. Cochet, Avoca, and Mrs. W. J. Grant were the most noteworthy varieties. Messrs. B. CANT & SONS, Colchester, were 2nd, and Messrs. F. CANT & Co., 3rd.

In the class for 12 trebles, Messrs. B. CANT & SON won the 1st prize, and Messrs. D. PRIOR & SON the 2nd prize.

Tea and Noisette varieties were fairly well shown by Mr. H. DREW, Longworth, Berks., who won premier awards with clean, if small, blooms, Messrs. D. PRIOR & SON being 2nd.

For six blooms of any one dark variety, Messrs. D. PRIOR & SON won easily, with exceptionally finely coloured specimens of Horace Vernet. Messrs. B. CANT & SONS were 2nd, with Ben Cant.

In a similar class for any light variety, Messrs. PRIOR & SON were 1st, with handsome specimens of Mrs. Theodore Roosevelt.

For the best display of decorative Roses, in a space 7 feet by 3 feet, there were three entrants. Mr. E. J. HICKS, Twyford, Berks., having much the finest display. Messrs. B. LADHAMS & Co., Shirley, Southampton, won the 2nd prize.

Several classes were confined to gardeners and amateurs. The principal one was for 18 blooms, distinct, for which the "Munt" silver cup was offered. There were five competitors. Dr. C. LAMPOUGH, Alverstoke, being an easy 1st, with clean, shapely examples.

The best Tea and Noisette blooms were staged by Mr. G. H. KENT, in the class for 12 blooms, and he was awarded the 1st prize.

Messrs. D. PRIOR & SON won the silver gilt medal for the best bloom in the show, with a handsome specimen of Mrs. T. Roosevelt, and the silver medal for the best bloom in the open classes, with Horace Vernet. Dr. LAMPOUGH securing a similar award in the amateur division with Mme. C. Gravereaux.

The best basket of Roses came from Mrs. E. LADHAMS, Shirley, Southampton—a charming display of *Farben Königin*.

SWEET PEAS.

Sweet Peas were shown remarkably well. For Messrs. Toogood's prizes for six bunches distinct, there were eight competitors. The best flowers were shown by Mr. H. H. LEIS, Warblington, Havant, an extremely fine display. Sir R. BAKER, M.P., Blandford (gr. Mr. Usher), was 2nd.

Sir R. BAKER won Messrs. Webb's 1st prize for six bunches.

FRUIT AND VEGETABLES.

Exhibits of fruit were not numerous. The best black and white Grapes were shown from L. WALKER MUNRO, Esq., Brockenhurst.

Mr. J. F. DUNCAN, Douglas House, New Milton, had the best Peaches—Condor, nicely coloured.

W. H. MYERS, Esq., Swanmore House, Bishop's Waltham (gr. Mr. C. Ellwood), won the 1st prize in the classes provided by Messrs. Toogood, Sutton, Webb, and Carter, showing fine produce in every case. Mrs. TRAGETT, Ambery Dances, Romsey (gr. Mr. H. Pearce), was 2nd in several classes.

HONORARY EXHIBITS.

Mr. C. F. WATERS, Balcombe Nurseries, Sussex, had a handsome group of Carnations; Messrs. B. LADHAMS & SON, Shirley, Southampton, arranged at one end of the large marquee an imitation of an old English garden; Messrs. Toogood & SONS had an extremely fine display of Sweet Peas and culinary Peas; Messrs. W. H. ROGERS & SON, The Nurseries, Southampton, had a group of Roses, plants, and cut blooms, the latter representing many of the new varieties; Mr. J. STEVENSON, Sweet Pea specialist, Wimborne, had 50 bunches of Sweet Peas; and Mr. E. WILKS, Winchester Road Nurseries, Southampton, miscellaneous plants and floral work.

GARDENING APPOINTMENTS.

[Correspondents are requested to write the names of persons and places as legibly as possible. No charge is made for these announcements, but if a small contribution is sent, to be placed in our collecting box for the Gardeners' Orphan Fund, it will be thankfully received, and an acknowledgment made in these columns.]

Mr. G. J. SQUIBBS, late Gardener to Sir WILLIAM COOPER, Bart., Whittlebury Lodge, Towcester, as Gardener to Sir ROBERT GREYLEY, Bart., Drakelow, Burton-on-Trent.

Mr. JOHN MURRAY, for the past 3 years Foreman at Lackham, Lacock, Wilts., as Gardener to Lady BRINKMAN, Binstead House, Ryde, Isle of Wight.

Mr. W. L. CREEK, for the past 3 years Foreman in Plaw Hatch Gardens, East Grinstead, Sussex, as Gardener to W. R. ARBUTHNOT, Esq., at the same place.

Mr. GEO. FRANCIS, for the past 11 years Gardener at the Croft, Hillmorton, Rugby, as Gardener to W. E. CLAY, Esq., Bramcote Hills, Nottingham.

CATALOGUES RECEIVED.

T. SMITH, Daisy Hill Nursery, Newry—Bulbs and Tubers.

THE WEATHER.

THE FOLLOWING SUMMARY RECORD of the weather throughout the British Islands, for the week ending July 9, is furnished from the Meteorological Office:—

GENERAL OBSERVATIONS.

The weather was rainy over the kingdom generally during the earlier days of the period, but the conditions improved after the 5th, at first in the west and subsequently in the east. Thunderstorms were experienced in places over a large area in England on the 3rd, and heavy rain occurred at several western and north-western stations on the 5th.

The temperature was below the average, the difference being large in nearly all parts of England. The highest of the maxima were recorded on the 4th at most of the eastern and northern stations, and on the 9th in the west and south-west. They ranged from 76° in Ireland S., and 75° in Scotland E. and W. to 67° in England N.E., and to 66° in the English Channel. During several days the maxima were very little higher than 60° over a considerable portion of Great Britain, and on some occasions below 60°. The lowest grass minima reported were 30° at Hereford and Sheffield, 31° at Llangamarch Wells, 32° at Markree Castle, and 34° at Newton Rigg.

The mean temperature of the sea was lower than during the corresponding week of last year on most coasts, as much as 5° at Wick. The mean values for the week ranged from 61° at Eastbourne, 60° at Margate and Newquay, and 59° at Seaford to 52° at Aberdeen and to 51° at Burnmouth and Wick.

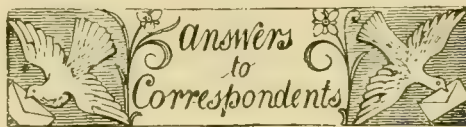
The rainfall was less than the average in Ireland, England S.W. and Scotland N., the deficit being large in the last district. Elsewhere there was an excess—very considerable in nearly all parts of England. Falls of an inch or more were measured at many stations in the north-west of England and in Wales, as well as at West Linton; the largest quantities reported were 1.32 inch at Aspatria and 1.66 inch at Aberdovey. At Worthing as much as 1.19 inches fell on the 3rd.

The bright sunshine was less than the normal in almost all parts of England, the deficit being large in the eastern, central and southern districts. In Ireland and in the east and west of Scotland there was an excess. The percentage of the possible duration ranged from 52 in Scotland W., 40 in Ireland N., and 39 in Ireland S. to 20 in England N.E. and to 15 in England E.

THE WEATHER IN WEST HERTS.

Week ending July 13.

The third cold week in succession.—Throughout the past three weeks there have been only two unseasonably warm days, and but five warm nights. The two warm days of this cold period occurred during the past week, when the highest reading in the thermometer screen was respectively 71° and 72°. On the other hand, on three days of the week the same thermometer did not rise higher than 58°, or 12° below the average maximum temperature for the time of year; and on the coldest night the exposed thermometer indicated a reading within 7° of the freezing point. Both at 1 and 2 feet deep the ground is now about 2° colder than is seasonable. Rain fell on the first two days of the week, but since then no measurable quantity has been recorded. Some rainwater has come through both of the percolation gauges on each day during the week, but in gradually diminishing quantities. The sun shone on an average for only 2½ hours a day, which is not much more than one third of the usual duration in July. One day proved altogether sunless, while on three other consecutive days the total record of sunshine amounted to only about an hour. The winds have been light, and have come principally from some northerly point of the compass. The mean amount of moisture in the air at three o'clock in the afternoon exceeded a seasonable quantity for that hour by as much as 11 per cent. E. M., "Rosebank," Berkhamsted, July 13, 1910.



Editors and Publisher.—Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the *Publisher*; and that all communications intended for publication, or referring to the Literary department, and all plants to be named, should be directed to the *Editors*. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

* * * The Editors will be glad to receive, for consideration, large photographs of horticultural subjects, suitable for reproduction as *Supplementary Illustrations* in this Journal.

ACALYPHA SANDERIANA: A. M. S. The spots on *Acalypha* leaves are known as "sap warts," caused by an excess of moisture in the air. The *Codiaeum* (*Croton*) leaves are also injured by an excess of moisture during a period of low temperatures. There is no fungous disease present.

AMPELOPSIS VEITCHII: W. F. & Co. The plant is attacked by eelworms, which are present in abundance. A cure is practically impossible, but some good may be done by watering at intervals of four days with a solution of formalin in water—1 in 1,000 parts might be tried.

BOLTED CAULIFLOWERS: W. M. The Cauliflowers appear to be of an inferior strain. Your culture seems to have been all right, but from a sowing made in August, the plants being wintered in a frame and planted out in spring, the heads should have been ready for cutting a month earlier. If you planted them out too early and the plants got cut by frost, they would then suffer a severe check; but should not produce bolters instead of good heads. Get a change of stock another season.

CAULIFLOWER PLANTS ATTACKED BY GRUBS: G. W. Fork a quantity of soot and lime into the rows, and treat the land, after the crop is cleared, with gas-lime, changing the crop next season.

CHRYSANTHEMUM: T. J. H. This condition is known as fasciation. It is not uncommon, but the cause is unknown, and there is no cure.

DISEASED CARNATIONS: C. D. M. Your Carnations are badly attacked by thrips. An occasional fumigation with a nicotine vaporising compound is recommended, or an insecticide may be used.

DISEASED LEAVES: W. M. & Co. The leaves are affected with scorch.

FIG: Co. Wicklow. There is no fungus present on the Fig branches. The injury may have been caused by keeping the roots too wet.

FRENCH BEANS: Westminster. Eelworms are present in the French Beans. Put lime in the soil after the plants are removed.

GRAPES SENT BY RAIL: Correspondent. Grapes sent by rail should be packed in baskets known as "handles," and tied by the stalks around the top of the basket. The weight per basket should not exceed 8 lb. to 10 lb. See that a suitable label is affixed, on which is prominently printed "Grapes, with care."

LILIUM AURATUM AND L. GIGANTEUM: J. E. The plants are attacked by *Botrytis cinerea*, a common disease which attacks Lilies. No certain remedy for this disease is known. The plants may be sprayed early in spring with a weak solution of potassium sulphide or dusted with flowers of sulphur. It is best, however, to burn the old bulbs and procure a fresh stock, planting them in a situation as far away from the old site as convenient.

LOGANBERRIES FAILING TO SET: B. The flowers are sterile, due to some constitutional defect in the plant. This is sometimes seen in Strawberries, Blackberries, and other members of the Rosaceæ. The unfavourable summer of last year may be responsible for the trouble.

Thin out the branches, leaving the strongest only to become well ripened.

MALFORMATIONS ON ALPINE RHODODENDRON: O. O. W. This is caused by a fungus *Exobasidium rhododendri*. All diseased portions should be removed, otherwise the disease spreads quickly.

MIGNONETTE: H. E. F. We can give no reason for the leaves dying off. There is no fungus present.

NAMES OF PLANTS: Henry Corder.—*Aspidium angulare*, *Phacelia tanacetifolia*, *Veronica salicifolia*.—*Archib. Lowe*. *Bromus sterilis*, *Festuca myurus*.—*C. S. & Co.* *Lathyrus sativus*.—*L. H.* *Campanula latiloba*, *Iris orientalis*.—*E. V. B.* *Cotyledon umbilicus*.—*C. J. M.* *Hemerocallis fulva*.—*C. W.* 1, *Spiraea filipendula*; 2, *Lychnis* (*Agrostemma*) *coronaria*; 3, *Campanula glomerata*; 4, *Leycesteria formosa*; 5, next week.—*W. P. B.* 1, *Spiraea Aruncus*; 2, *Eriophorum angustifolium* (*Cotton Grass*); 3, *Orchis Morio*; 4, *Astrantia major*; 5, next week.—*J. J. H.* *Erinus alpinus*.—*Chas. S.* *Cuscuta medicaginis* from South Africa (long-stalked form).—*G. P.* These are all varieties of *Lychnis Haageana*.—*T. A. H.* (a) *Gentiana cruciata*; (b) *G. brevidens*.—*H. N.* 1, *Dendrobium moniliforme*; 2, *Galeandra devoniana*; 3, *Eria acervata*; 4, *E. marginata*; 5, *Zygopetalum erinitum*; 6, *Odontoglossum blandum*.—*F. S., Perth.* 1, *Cheilanthes elegans*; 2, *C. hirta*; 3, *Davallia bullata*; 4, *Pteris longifolia*.—*C. H.* *Lycium chinense*.—*E. M. R.* *Coton-easter frigida*.—*G. H.* We cannot name the *Dianthus* from such a specimen.—*G. W. W. & Co.* *Phacelia campanularia*, so far as can be determined from the specimen before us.

ORCHID: J. K., Dulwich. The species shown in the photograph is *Acineta Barkeri*, from Mexico. Several of the species are nearly alike in appearance, showing only a little colour variation.

PEAS DISEASED: W. B. C., Dumfries. The cause of the injury is a fungus in the soil belonging to the genus *Rhizoctinia*.

PLANTS AND WEEDS DISEASED: J. F. P. The injury is caused by the fungus—*Hormodendron Hordei*, which first develops on decaying plants. Spraying with dilute Bordeaux mixture will check its progress.

POTATOS: J. D. J. The leaves and shoots are attacked by *Hormodendron Hordei*. A spraying with Bordeaux mixture will check this pest and also the common Potato disease.

RUCELLIA MACRANTHA: S. H. G. This species is a very easy plant to cultivate in a stove or in temperate house. If the specimens are old and unsightly, it will be desirable to take cuttings root them in the ordinary way, and pot them on to flower next year. It is better to proceed in this way than to retain old plants. For the potting medium use a compost of loam, with little sand and leaf-soil mixed with it.

ROSE LEAVES DISEASED: I. J. The leaves are affected with Black Blotch. Spray the plants at intervals of three days with 1 oz. of liver of sulphur in two gallons of water.

THE NATIONAL VEGETABLE SOCIETY: J. A. T. The promoters of this Society were actuated by the desire to spread information concerning the best varieties of vegetables and their culture. The Society is conducting trials of vegetable in order to obtain information such as was published in the report on autumn-sown Cabbage printed on p. 423. The Society will hold an exhibition of vegetables in the Horticulture Hall, Vincent Square, Westminster, on September 28 next. The Secretary is Mr. E. C. Quick, Kelmescott, Harrow View, Wealdstone.

Communications Received.—K. & S. (If you will refer to the report published last week, you will see that the information was given.)—T. C.—S. C.—A. & B. Ltd. W. M. W.—C. J. E.—W. P. R.—G. P. P.—P. W.—G. H.—C. J. E.—C. T. D.—Yorkshire Gardener—J. D. S. & D. Hort. Assoc.—G. P.—P. G.—W. J. V.—M. M. K.—W. I.—T. S.—J. G. W.—J. C.—F. M.—F. K.—E. W. Sons—F. W. J.—W. E. B.—F. J.—J. S.—E. Young. Juvenile—J. E. S.—J. F. T.—P. S., Salzboung—R. H. R. I. & Co.—W. K.—J. L.—G. L.—W. McM. B., California—Headle Hort. Soc.—Midland Agric. College W. P.—J. A. P.—J. A. B.—T. S.—R. I. L.—Hort. Colleg Swanley—F. M.



SENECIO GLASTIFOLIUS VAR. : COLOUR OF FLOWERS, BRIGHT ROSE-PURPLE.

THE Gardeners' Chronicle

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MONT CENIS IN JUNE.

ENCOURAGED by Mr. Stuart Thompson's articles in the *Gardeners' Chronicle*, I arrived on Mont Cenis on June 22, and, for wealth of gorgeousness, I have never yet seen anything to equal the display then made by hill and meadow. In front of the Hotel de la Poste, all down to the Lake, *Gentiana verna* and *G. angulosa* were extended in sheets of colour; *G. acaulis* also occurred, *Dianthus neglectus* was present, but, of course, indistinguishable in bud. The whole sward was a vast carpet everywhere (visible from miles away) of *Viola calcarata*, in every shape and shade, from pure white to dark violet, with azure slabs of *Gentiana verna* interspersed, and wide mats of *Globularia cordifolia* giving a softer and mistier tone of blue. Here and there the indigo trumpets of *G. acaulis* came like deep notes of music in a lighter composition. *Erysimum pumilum*, *Potentilla alpestris*, and *Alyssum montanum* struck a general chord of yellows. *Dryas* was just beginning to bloom; *Hugueninia* lurked in hollows; *Daphne Mezereum* and *Pulmonaria angustifolia* were passing over.

Higher up, behind the hotel (on one slope

only), *Anemone Halleri* was giving place to *Rosa alpina* and *Anthericum liliastrum*. But *A. alpina* was everywhere, in a riotous magnificence that convinced me I am right, in preferring the species to *A. a. sulphurea*. Its beauty was overwhelming: each slope was snowed over with big clumps of pure white flowers, golden-eyed and dazzling. There were double forms, and giant forms, and windmill-shaped beauties with sepals that did not fit; some were blue on the reverse, and others pink, and others purple as a Plum. They were in all stages of development: each clump carried from two to ten flowers; and each clump, each flower, was a thing to pause over in rapture. *A. alpina* was almost universally white, like all the local rocks, but a yellow form occurred rarely (with intermediate creamy varieties), yet it was not *A. a. sulphurea*. Was it *A. burseriana*? Here and there, in gullies, *A. baldensis* was unfolding buds: *A. vernalis* on the higher fells, was passing, from its exquisite prime into its disreputable and dishonoured old age.

Specially beautiful, too, was *Ranunculus pyrenaicus*—to all those who have not collected it in flower, a perfect revelation. For its forms vary indefinitely: many are starry, poor and worthless; but many try to equal *R. alexicaulis*; and others have imbricated rows of petals, whilst there are pure white flowers (like Banksian Roses), and white and yellow forms, with golden stamens, or green leafy carpels, lurking amid a loose, double, or triple row of petals. All the hills are white with *Anemone alpina*, but everywhere, too, there is an underlying snowdrift in all the hollows of this wonderful *Ranunculus pyrenaicus*. But *R. rutæfolius*, which abounds on the Col, and on the Little Mont Cenis, is a poor thing: its dull, green-eyed flowers not large enough to carry off the beautiful rue-like foliage; *R. aconitifolius* was but just coming into bloom, in stretches of marsh, where the fierce orange sheets of *Caltha* were making what headway they could against the bland citron-yellow of *Trollius*, which covered acres of ground.

The high alpine, of course, were either still asleep or barely stirring from their slumbers. Indeed, deep snow still masked all the mountain lakes and upper shingles. However, *Ranunculus glacialis* was already opening its golden eye on a shale-slope like the refuse of a coal-pit, and, I was also able to collect a quantity of *Eritrichium*, *Iberidella*, *Campanula cenisia*, and *C. Allionii*. *Petrocallis*, too, were abundant in the high-stone-slides. *Geum reptans* was awakening amid the granite-blocks. Of *Androsace glacialis* I only discovered one uncovered plant. A little lower, and *A. Vitaliana* was spread in saffron sheets over every stone in the short alpine herbage. The real *A. carnea* was common on grassy ridges, and lower still, *A. brigantia* peered among the *Gentians*. I only struck on one plant of *Saxifraga biflora*, as yet revealed. *S. oppositifolia*, though, was in full magenta magnificence high up, and in one valley, after walking through glades of *Primula pedemontana*, I came on an oasis in the snow, where, round a rock, *Saxifraga retusa* was brilliant and exquisite, like a glorified version of *Azalea (Loiseleuria) alpina*.

Aquilegia alpina gave promise by the million, but was only in bud. In bud, too, in

one precious gulley, was *Cortusa Matthioli*, peeping up among the violet bells of *Soldanella montana*, in a sodden glen of wintry brushwood that carried me back to the sere woodland gorges of Nantai-san as they appear in March. Round all the melting snow-patches (and there were many) *Soldanella alpina* was a film of purple. Amid *Crocus vernus albi-florus*, belying its name by producing myriads of striped, flaked, splashed and feathered flowers, from tenderest lavender to darkest violet, *Primula farinosa*, too, rolled by acres over the marshes, although colour-forms were rare, and, among the *Crocus*, *Bulbocodium vernum* lingered, like a belated little *Colchicum*. On the south side, *Saponaria lutea* was far down in bud. *Senecio Doronicum* was busy giving a flat contradiction to my notes and experience, for I had never before realised its polymorphism. In Oberland and Valais it is a gorgeous orange splendour; but on Mont Cenis, in the Cottian Alps, and here, in the Maritime Alps, it is a feeble yellow, no better than that of *S. arnica*, and not so good as a Dandelion. But never, never, apparently, in any district, does it take to running at the root and forming a wide-spreading patch, like the bald and weed-like plant which too often bears its name in gardens. *Reginald Farier*.

NEW OR NOTEWORTHY PLANTS.

A NEW TULIP FROM BOKHARA.*

(See Supplementary Illustration.)

DR. FEDTSCHENKO sends a description of a brilliant and striking species of *Tulipa* native of the Central Asiatic desert and grown in Mr. C. G. Van Tubergen's gardens at Haarlem. *T. Hoogiana* is a member of the section *Eriobulbi*, having the outer bulb scales covered on the inside with reddish hairs. The stem, including the flower, varies from 6 to 18 inches in height, but is generally 9 to 12 inches; it is quite smooth. The leaves, which are described as quasi-opposite, are four to six in number, lanceolate-tapering and smooth, but with a very narrow, membranous, white, shortly ciliated margin: the lowest leaf is 8 to 10 inches long and 1½ to 3 inches broad. The flower is scarlet, with a large, black blotch bordered with orange on each petal within the cup, and a corresponding yellowish blotch on the exterior. The broad petals are somewhat abruptly acuminate at the apex. The filaments of the stamens are linear-lanceolate, blackish-violet in colour, and bear blackish anthers.

In its general habit and in the great black eye contrasting brilliantly with the bright scarlet of the flower, *Tulipa Hoogiana* recalls the well-known *T. Oculus-solis*, a species belonging to the same section. The section includes other Central Asiatic species, such as *T. Borszczowii*, with a deep blue blotch on the red or yellow petals, the more widely-spread *T. montana*, and the smaller yellow-flowered *T. chrysantha*. *Boris Fedtschenko, Principal Botanist of the Imperial Botanical Garden, St. Petersburg.*

* *TULIPA HOOGIANA*, B. FEDTSCH, n. sp.—Bulbus ovato-oblongus, tunicis fuscis, exterioribus intus rufo-lanatis. (Caus. cum flore) supra terram (15–24–31–(45) cm. altus, glaber. Folia (4)–5–6, quasi opposita, omnia lanceolata, sensim attenuata, inferiora latiora, omnia glaberrima, margine angustissime albo-membranacea, breviter ciliolata; folium inferum 20–25 cm. longum, 3, 5–7 cm. latum, folium supremum 13–14 cm. longum, 1–2½ cm. latum. Flos unicum, c. cernuum. Sepala exteriora tria a petalo interioribus tribus divergentia. Sepala et petala oblongo-lanceolata, versus apicem acuminate, coccinea, extus basi lutescentia, intus basi nigro-maculata, macula elliptica, luteo marginata, sepalorum et petalorum similis, vel macula sepalorum paulo latior, apice retusa, macula petalorum tunc angustior, apice acutiuscula. Filamenta nigro-violacea, lineari. Lanceolata anthera nigrescentes.

Locus.—Bukhara, planta hactenus speciosissima in horto Tutergeri, jr. (Haarlem) culta, unique culta in S. M. C. Hoogedico.

THE ROSARY.

NOISETTES AND THEIR HYBRIDS.

So closely do some of the Noisette Roses resemble in habit of flowering the freest-blooming Tea-scented varieties that some of them are classed in different sections even by experienced growers. In fact, the Teas and Noisettes, with their hybrids, might almost go as one class, were it not that some have a less tendency to flower in large bunches, such as Mildred, Avoca, Charles J. Grahame, Lady Ashtown, and William Shean.

There are a few older varieties of Noisettes and hybrids that do not receive due recognition in the gardening Press. *Jaune Desprez*, a Rose of 1830, is not often seen, except as aged plants in a few gardens. Where it thrives, this old Rose is very charming, with its varying colours of red, buff, and sulphur-yellow, while there are few sweeter scented. *Lamarque* was also introduced in 1830, and is still one of the best, pale lemon-whites for a warm wall. This Rose does not come "sulphur-yellow" with me, as described in Messrs. W. Paul & Son's list: but *Solfaterre*, sent out 13 years later, is, to my eye, one of the clearest sulphur-yellows we have. *Ophirie* (1841) is distinct, with its chaste shadings of nankeen and copper, and we have few more reliable autumnal Roses than this variety. *Joseph Bernacchi* is a yellowish-white, with an almost sulphur-yellow centre, and with very long buds. I am surprised that it is not more grown: its reputation for shy blooming is not deserved. Simply refrain from pruning it, and give it a fairly warm position, and few yellow-flowering, climbing Roses will be more satisfactory. *Triomphe de Reunes* (1857) is a canary-yellow-coloured flower, and often very pretty. *Fortune's Yellow* (1845) is unapproachable in its rich shades of orange-yellow, shaded and splashed with carmine and metallic red. The flowers vary much, and the plant needs a warm wall, or the help of a cool conservatory. It is a tremendous grower, and it is not improved by pruning. Those already mentioned are a few of the older and true Noisettes that are in danger of neglect in the rush for newer varieties. *Aimée Vibert*, *Alister Stella Gray*, *Céline*, *Forestier* *Mme. Pierre Cochet*, *Rêve d'Or*, *Bouquet d'Or*, *L'Idéal*, and *William Allen Richardson* are not likely to be missed, and need no description here.

But there are some newer Noisettes not so well known, among which are *Golden Queen* (1903), a Rose somewhat resembling *Rêve d'Or*, but deeper in colour, more uniform in its rich, golden yellow, and a distinct shade of copper. I find it more tender than *Rêve d'Or*, and impatient of the knife, except with respect to the cutting out of bad wood. *Souvenir de Madame Viennet* (1897) is a very attractive Rose. I note that some growers put this among the Teas, and the National Rose Society so classes it. This is a clear carmine and rose upon a yellow ground, not very double, sometimes splashes, and in immense typical Noisette trusses carried upright, each flower well away from its fellows. There is also a pale yellow form of the old favourite, *Aimée Vibert*, which was sent out in 1906, and it promises well.

I cannot close without saying a few words upon the older hybrids of Noisettes. *Boule de Neige* and *Mme. Alfred Carrière* are well known. *Mme. Plantier* (1835) is one of the very hardiest and earliest Roses we have; the blooms are flat and not very large, the plants are certain bloomers, and the variety is one of the purest whites for massing. I have seen this Rose growing in an old quickset hedge, and the effect is very pleasing. It is one of the few varieties that can be trimmed up with bill-hook or shears, and will still flower freely early in the season. *Coquette des Blanches* and *Perle des Blanches* are two favourite, pure-white varieties. *Mme. Alfred de Rougemont* (1863) is a small, globular flower, pure white in the centre, with a distinct rosy tinge at the edges of its petals. *Mme. François Pittet* is a very useful little white Rose for

pot-culture or for bedding. This is simply one mass of flower. *Crepuscle* is a new Noisette that already ranks as one of the very best in its class: a vigorous grower and very free flowering. The following colours are all in the flower, rich coppery-yellow, rayed and tinted with deep *Nasturtium* red and yellow; the buds are long, retain their shape well, and perhaps I may be allowed to call it a link between *L'Idéal* and *William Allen Richardson*. It has been very pleasing here during the past three seasons. *A. Piper*.

ORCHID NOTES AND GLEANINGS.

DENDROBIUM REGIUM.

THIS pretty species, which those who do not cultivate it successfully are apt to look upon as too near to *D. nobile* to warrant it being grown extensively, has probably never been seen in such good condition as in the specimen now in flower in the collection of J. Gurney Fowler, Esq., Glebelands, South Woodford (gr. Mr. J. Davis). The flowers are much larger than those of the best forms of *D. nobile*, and all the segments are equally broad and the labellum very finely developed. The outer parts of the segments are of a bright rose-purple tint, the inner part white, the labellum having a clear lemon-yellow disc. With such flowers, the affinity to *D. nobile* is quite lost, and there is no other *Dendrobium* comparable with *D. regium* in its section.

LÆLIA GRANDIFLORA (MAJALIS).

MR. H. HADDON, gardener to J. J. Neale, Esq., Lynwood, Penarth, writes that the plants of *Lælia grandiflora*, which usually flower well at Lynwood grown in the house in which the *Sarracenia*s and other cool-house plants are cultivated, are now in perfection, and among them a distinct variety, a flower of which is sent. The chief difference is that in the flower sent there are no rose-coloured lines in the lip, the base and the side lobes being white, the front only being tinged with rosy-lilac of a similar shade to the sepals and petals. The substance of the flower is firmer than usual in the species.

CATASETUM RUSSELLIANUM, HOOK. = C. THYLACIOCHILUM, LEM.

AN interesting question is raised by the proof of the variability in *Catasetum russellianum* now furnished in a plant in the collection of J. Gurney Fowler, Esq., Glebelands, South Woodford (gr. Mr. T. Davis). When it flowered previously the blooms were typical *C. russellianum*, being whitish, striped and tinged with green, the basal portion of the lip concave and slightly enlarged in the fore part, and the margin of the lip fimbriated. This year the plant produced a more dense inflorescence, the flowers being smaller, and the elongated pouch beneath the labellum more shallow. In fact, the last flowers were identical with the small illustration of *Catasetum thylacochilum*, Lem., accompanying the description in *Illustr. Hort.* III. (1856), Misc. 90, the plant being recorded from Mexico, whereas *C. russellianum* was originally recorded from Guatemala, both regions having some plants in common. In the absence of any botanical feature to separate the two plants, and in view of the fact that both belong to that very small section of three or four species which have no antennæ to the column, and are known as *Ecirrhosæ*, together with the now known variation proved in Mr. J. Gurney Fowler's collection, there seems to be no doubt as to the identity of *C. thylacochilum* with the earlier recorded *C. russellianum*, especially as the same author's reliability is discredited by the fact that his *Catasetum trimerochilum*, *Illustr. Hort.* IX. (1862), t. 374, is not a *Catasetum*, but *Mormodes lineata*. The variability of *C. russellianum* suggests that the small section not fur-

nished with cirrhus may vary, and, consequently, the other two known in gardens—*C. Warszewiczii* and *C. Scurra*, which are closely allied to each other—may be the same species.

So far as it has been tested, a sensitive part of the surface of the columns in this small section performs the same object of causing the pollina to be ejected when touched by an insect as the cirrhus does in the larger section. *J. O'B.*

TREES AND SHRUBS.

TREES AT CLAREMONT.*

IT is a considerable distinction for a garden to possess the finest specimen in the kingdom of even one kind of tree, but Claremont has within its boundaries four or five for which we believe precedence may be claimed over all others of the same species in the British Isles. Writing in 1838, J. C. Loudon observed that Claremont at that time contained "a great many exotic trees, particularly Cedars of large dimensions, very large Cork Oaks, Tulip trees and others of foreign origin" which had been planted by "Capability" Brown for the great Lord Clive about 1768. Many, no doubt, that were in their prime in Loudon's time have since disappeared. Claremont, as is generally known, is now the residence of H.R.H. the Duchess of Albany, and it is gratifying to know that Her Royal Highness takes a keen interest and pleasure in her trees and their preservation. Some valuable specimens have been promised for the new Museum of British Forestry now in course of formation at Kew.

Gymnocladus canadensis (Kentucky Coffee tree) is represented by the finest specimen in the British Isles. It is over 60 feet high and its trunk is 7 feet in girth. *Sassafras officinale* with a trunk girthing 7 feet 2 inches (at 1 foot from the ground) and a height of about 50 feet, is the only fine specimen in the kingdom. *Magnolia macrophylla*, whose extraordinary leaves are often 2 to 2½ feet long and 9 or 10 inches wide, is 40 to 45 feet high and the trunk 2 feet 11 inches in girth. This tree is exceedingly rare in Britain, and we know of no other that approaches these dimensions.* A specimen of Redwood (*Sequoia sempervirens*) is in perfect health and shape. It is over 100 feet high and its trunk is 13 feet 7 inches in girth, clothed from base to summit with branches and forming a slender pyramid. These four trees we believe are unrivalled in our islands, and scarcely inferior of its kind is an immense *Pterocarya caucasica*, equalling the splendid trees near Vienna. It branches very low down and the short trunk is over 19 feet in circumference; the head is about 50 feet high with a diameter of 100 feet. This tree flowers freely. According to Mr. Elwes it is surpassed by a tree at Melbury, Dorset. Of the Cork Oaks (*Quercus Suber*) mentioned by Loudon, one huge specimen at least remains; its trunk is 8 or 10 feet high and 13 feet 10 inches in girth, bearing a wide-spreading head of branches which is, unfortunately, badly damaged on the south-west side.

The following specimens whilst not the finest of their kind are certainly in the very first rank among British trees: *Magnolia acuminata*, 60 feet high, 5 feet 10 inches in girth; *Deodar* (*Cedrus Deodara*), 8 feet 5 inches in girth; *Bishop's Pine* (*Pinus muricata*), 80 feet high, 7 feet 10 inches in girth; *Cryptomeria japonica*, 60 to 65 feet high, 8 feet in girth; *Cunninghamia sinensis* rarely seen in good form is here a shapely tree 35 feet high and 3 feet 10 inches in girth.

Of smaller-growing species, there are three excellent specimens of the broad-leaved Holly, *Ilex latifolia*, 16 feet high and bushy; *Buxus balearica*, 13 feet high and 9 feet through; and the *Nepal Juniper* (*Juniperus recurva*), with an umbrella-like head of branches 22 feet across.

* W. J. B., in *Kew Bulletin*, No. 5, 1910.

NURSERY NOTES.

MR. PERRY'S HARDY PLANT FARMS.

MR. AMOS PERRY, the founder and proprietor of the hardy plant farms at Enfield, being one of the pioneers in hardy plant culture, has seen this phase of gardening raised from the depths of obscurity to its present popularity. He knew the time when the only exhibitors of a dozen or two specimens were Parker, Rolison, or Ware—rarely all showing at the same time, and when hardy plants were so little esteemed that it was considered a concession to afford space for them at any London exhibition. To have lived through the days of the scarlet Pelargonium, the pattern gardening, and other

50,000 plants of Delphinium, the myriads of towering spikes forming an imposing spectacle. The collection is rich, not, however, in endless varieties, for there is rigid selection and reselection of distinct and good things which experience of the established examples has proved to be indispensable. In looking at this imposing array of flowering plants, hundreds or, perhaps, thousands of a single variety, with their big, wide-spreading flowers, in this case royal purple, in that palest blue, whose pure white or dark "bee" centres are often in pleasing contrast with the main body colour of the flower, one instinctively recalls the Larkspurs of former years and their tall, lean spikes of small, much-headed flowers. To-day, however, the gardener has in the Delphinium a plant of moderately tall habit,

whose intense deep blue flowers, finely cut leafage and dark stems render it one of the most distinct varieties; Julia, gentian-blue with white eye, and Amos Perry, metallic blue, with a small, dark eye.

These are but a selection from the better ones to illustrate the predominating colours. Apart from the general collection are many others, named and unnamed, which have been selected for further trial. Some of these, such as "73" and "76," are great gains, whose depth of colour, dark Aconitum-like buds and good habit render them conspicuous among their fellows. Others promise to eclipse even that remarkable variety, the Rev. E. Lascelles. Then, of course, there is the white-flowered section, or that section of the flower which at one extreme embraces the whitest as yet, and from this leads through ivory and cream to the palest primrose or sulphury yellow shades at the other end of the chain. So far, no rapid progress has been made in either direction, despite the fact that both white-flowered and yellow-flowered varieties or species do occur in the group. To raise either of these colour shades to the same high standard of excellence as is seen in the blue-flowered forms will naturally require much time, and the fulfilment of the promise may remain for future generations. To-day, however, one thing is clear that whereas blue-flowered varieties of the best types will sell in their hundreds or thousands, the whites and allied shades appeal only to a small number of specialists.

The Larkspurs, however, although one of the great features of Mr. Perry's place in June and July, are but a solitary item in the nurseries. There are Irises by the acre, including the more grotesque of the cushion forms, the hybrids or cross-breeds nearly or distinctly related thereto, together with a great number of interesting species, to say nothing of the wonderful array of flag Irises, and that ever fascinating race of Japanese flags, *I. lœvigata*, which appears as a fitting finale to a flowering period which continues unbroken for many months. Lilies, Eremuri, Michaelmas Daisies, and Spiræas are grown in great numbers, Spiræas forming a fine group of plants for water-side gardening. Aquatics, including the hybrid Nymphæas, are cultivated on a large scale. In this department *Thalia dealbata* in flower, if not showy, was a most interesting subject, while the giant form of *Saxifraga peltata*, rising to several feet in height, is equally valuable for the waterside and shady places. In the Alpine department many things claimed attention, but I can only mention the pretty *Parrya Menziesii*, which may be likened to a purple-flowered *Alyssum*; *Phyteuma comosa*, and its still rarer variety, *P. c. alba*; and *Onosma decipiens*.

The hardy Fern department is an extensive and modern addition to the establishment, where thousands of plants receive proper shade and accommodation in lattice-work sheds that render an inspection of them at once easy and convenient. Seedling Ferns are being raised in their thousands. *E. H. Jenkins.*



FIG. 21.—ROSE "SIMPLICITY": WHITE, SINGLE VARIETY.

types of summer bedding, and to witness how hardy plants are now in the forefront of good gardening, whilst there are numerous nurseries wholly devoted to their cultivation, is an experience indeed.

Instrumental as Mr. Perry has been in the introduction of not a few good hardy plants to this country, he naturally has many reminiscences, but I will confine my remarks to the nursery. Those who saw his "blue tent" at the recent Holland House Show, when he arranged some 25,000 or so of cut spikes of Delphiniums, will not need to be told that the Enfield resources in this particular line are great indeed. It is the first time, and I speak with an experience of nearly 40 years of London exhibitions, that an entire tent has been devoted to a single group of plants. At Enfield, there are some

whose stately spires of richly-coloured flowers are very handsome. In short, to the July garden these Larkspurs have become indispensable, not a few of the plants producing a secondary flowering in September or thereabouts. The following are some of the more conspicuous in Mr. Perry's collection: Queen Emma, azure blue, brown bee centre, very fine; Lizzie, sky-blue with white eye; Rev. J. J. Stubbs, sky-blue with a dark centre; Duke of Connaught, deep gentian-blue and conspicuous white eye; Mme. Violet Geslin, intense blue, flecked with mauve; General Baden Powell, metallic blue with greyish centre; Dragon Fly, royal purple with white centre; Blue Tendre, palest sky-blue with white eyes; Portia, azure-blue with large, dark, bee centre; King of Delphiniums, semi-double, royal-purple with conspicuous white eye; Lamartini,

ROSE "SIMPLICITY."

THIS beautiful hybrid Tea Rose may be best described as a single flower, although the blooms possess more than a single row of petals, for its yellow centre contributes very largely to its effectiveness. The petals are pure white, like those of Frau Karl Druschki, and so large as to make the blooms very striking. At the Holland House Show an epergne furnished with flowers of Simplicity was one of the most conspicuous features in Mr. Hugh Dickson's fine exhibit of Roses. The variety was also displayed in several of the nurserymen's exhibits at the National Rose Society's Show, held in the Royal Botanic Society's gardens, on the 8th inst. The plant is described as a very vigorous grower, so that it may be expected to prove a good garden Rose.

THE ALPINE GARDEN.

SENECIO DORONICUM.

MR. REGINALD FARRER is concerned because of the marked difference between the big patches of *Senecio Doronicum* growing at Kew Gardens and at Oxford, which are "almost completely lacking in tomentum and have thin-textured, flaccid leaves of a clear green," and those in his own nursery in Yorkshire, which "retain their Alpine character without swerving." And he asks "is this alteration simply due to long cultivation or is it specific?"

I may be allowed to point out that *Senecio Doronicum* is known to be one of the most polymorphic of Alpine plants, and therefore little importance need be attached to the forms which it adopts under cultivation in England.

Mr. Farrer is at present staying at Mt. Cenis. If he will look into some of the curious pits in the rough ground immediately opposite his hotel, he may perhaps find green, attenuated examples

others to add to the already vast maze of useless names and synonyms, knowing full well that many so-called varieties and forms are not constant.

I will give but two examples of the coining of undesirable new names by nurserymen which have come under my notice during the past month. In a nursery garden I observed some pots of good, typical plants of *Veronica fruticulosa* L. labelled "*V. saxatilis rosea*," the very existence of the Linnean name being unknown in the nursery. The excuse is that the beautiful blue *V. saxatilis* is a well-known plant in rock-gardens and on a few Highland summits, while the less common, pink-flowered and shrubbier *fruticulosa* one might expect to come more under the heading of "novelties" in certain catalogues. Grenier and Godron called *V. saxatilis* Jacq. the variety *pilosa* of *V. fruticulosa* L., which is far more reasonable than to ignore the older Linnean name altogether.

Again, I was recently shown by a gardener as something exceptional in his really beautiful

THE plant described by Mr. Farrer in the *Gardeners' Chronicle* of June 25 as grown at Kew and Oxford as *Senecio Doronicum*, which differs so materially from the Alpine form, is one which I have known for many years. I believe Jacquin is the authority for the name of this plant, which is said to have been introduced in 1705, but I have not access to his description. The non-Alpine form, if I may use such a term, is the more plentiful, and it is sold almost universally in nurseries as *Senecio Doronicum*. It is of no special beauty, and is a great grower in most gardens. Mr. Farrer has done well to call attention to the difference and to the superior beauty of the form with true Alpine characteristics. *S. Arnott.*

In the *Gardeners' Chronicle* for June 6, p. 424, Mr. R. Farrer asks for the history of the plant grown under the name of *Senecio Doronicum* at Kew and elsewhere. There appears to be no record as to the origin of this plant, which



FIG. 22.—*ASTER DIPLOSTEPHIOIDES*: RAY FLORETS MAUVE, DISC YELLOW.

(See p. 57.)

of *S. Doronicum* 18 inches long, and, probably thus drawn out in their endeavour to reach the light; while, if he climbs a gully at the back of his hotel, he will possibly find clumps of the plant which are intermediate both in stature and in the amount of tomentum, between the thin-textured flaccid-leaved form and the truly Alpine plant, which grows 1,000 feet higher.

A great deal too much importance is being attached by nurserymen in England to minute differences, or even marked differences, of form and character, exhibited by individuals of certain hardy plants. I have heard some of them complain that it is useless to send a possibly new form to Kew, for it will be returned with merely the specific name. The botanists at Kew, and those who have had great experience of seeing plants grow in their native haunts, are accustomed to the immense variability of certain species, and, fortunately, they are not disposed to encourage nurserymen and

rock-garden, some miserable and small-headed specimens of the common *Orchis maculata* labelled "*superba*"! They had been bought a year or two previously from a well-known London firm. It came as a shock to this man to be told that he could find far handsomer specimens of this common *Orchis* on the heathy commons in his own district. But such cases could be multiplied, for the temptation in the trade is greater even than that of the young American botanists who sometimes wish to gain kudos by the rash application of new names to plants which may have been known for many years and properly determined.

The question of "novelties" in trade catalogues is another point to which attention might be drawn, for even though the term be used in a relative sense, it looks ridiculous to see such common and widely-spread plants as *Biscutella lævigata*, *Calamintha alpina*, and *Ajuga pyramidalis* figuring as "novelties." *H. Stuart Thompson*

probably came with others in a collection presented to Kew when the rock-garden was formed.

On looking through the specimens in the Herbarium, it is evident that *Senecio Doronicum*, collected in various countries, differ very much both in habit and in the amount of tomentum on the leaves and stems. The Kew plant appears to more nearly resemble forms that are found in Transylvania and Hungary, which have received the name var. *glaberrimus*. There is also a specimen of *S. Doronicum* collected in the Tyrol without the usual tomentum and closely resembling our plant. Nyman, in the *Conspectus Floræ Europææ*, gives three distinct varieties: var. *transsilvanicus*, var. *ruthenicus*, and var. *Gerardii*. The var. *glaberrimus* is referred to as a synonym of the var. *transsilvanicus*. There is also a fourth variety, *S. Doronicum* var. *Hosmariensis*, from the limestone rocks of Northern Morocco, which is figured in the *Botanical Magazine*, t. 6101. It may thus be inferred that the Kew plant is not an instance of degradation, but

merely a geographical form that makes quite an ornamental plant for the rock-garden on account of its free habit and general floriferousness. *W. I.*

VIOLA VALDERIA.

BURNAT gives this very rare and interesting Pansy as synonymous with *V. alpina*, which is a species of the Eastern Alps, differing from *V. cenisia* in the possession of a single tap-root, of a strictly tufted habit and of a less greyish colouring in its foliage. (*V. cenisia* is often of a livid colour, like iron.) On the other hand, some declare that *V. Valderia* is close to *V. heterophylla*. I am far from all authorities here, but in the midst of *Viola Valderia*. From so much acquaintance I should certainly say it was a very close relation of *V. cenisia*, and only the remotest cousin of *V. heterophylla*. It occurs on stone slopes invariably, has a tap-root and a tufted habit; its foliage, thoroughly villous, is of a greener colouring than *V. cenisia*; otherwise the two plants are very close together, though *V. Valderia* grows at lower elevations than the high, shingle slopes affected by *V. cenisia*. Here, in its name-place, *V. Valderia* inhabits rubble-slides at about 4,000 to 4,500 feet, as against the 7,000 feet at which, in my experience, you may first begin to hope for *V. cenisia*. The flowers of *V. Valderia* are charming; they are variable, but not to the extent of *V. catarata*, longish and starry outline, like refined *V. cornuta* pulled into a better shape. The lateral and lower petals have a pencilled purple dash and beard at their junction, which gives intelligence to the expression of the soft lavender flowers, with their delicate, golden eye. One may hope that this exquisite and rare treasure may be amenable to moraine culture; in open ground it would probably grow coarse and unattractive, its flowers not being large enough to admit of any further development in leafage or habit. On the contrary, like *V. cenisia*, it may prove difficult and hard to satisfy, unless treated carefully as a plant of the high moraines. At first sight, however, I must confess it looks as if it might well turn out a more amenable plant than the wonderful, beautiful *V. cenisia*. *Reginald Farrer, Baths of Valdieri.*

NOTES ON IRISES.

SOME CALIFORNIAN IRISES.

THE various species of *Iris* native of the Western States of America seem to be well known and less generally cultivated than they deserve to be. The chief reason for this neglect appears to be that they do not lend themselves to the nurseryman's habit of moving all herbaceous plants in the autumn. If the plants are uprooted then, the more delicate of these species invariably die. They are somewhat erratic in their behaviour at any time, but, if treated carefully, they may be moved with very reasonable success at any time from April till early September, though, by preference, I should choose the earlier part of this period for the operation. By careful treatment is meant that the young root-fibres must not be ruthlessly trimmed off after the neat fashion in which *Iris* rhizomes arrive from Holland, for the slender rhizomes send out comparatively few of these fibres, and if these few are mangled, the plant stands little chance of re-establishing itself in new quarters. These Irises are best suited in a light soil that is free from lime and rich in humus.

It is a curious fact that American Irises seem to go in pairs, the individual members of which are, in most ways, almost identical, though their other characters are so distinct that we cannot group them together as one species. Of such pairs, *I. bracteata* and *Purdyi*, *I. longipetala* and *missouriensis*, *I. Watsoniana* and *Douglasiana*, *I. hexagona* and *hexagona Lamancei* are examples, though the two latter are, of course, natives of the Eastern States.

I. bracteata is one of the most beautiful of all Irises. It derives its name from the fact that its stem is clothed in short, leafy bracts, and its evergreen habit is certainly a point in its favour. The flowers are yellow-veined conspicuously, and yet delicately, with a colour that comes very near to crimson, while the deep-green, glossy leaves set off the flowers to great advantage. *I. Purdyi* is very similar. The leaves are rather narrower and shorter, but the flowers bear the same crimson veins on a yellow ground, although, in this case, the shade is a little lighter. In both species, the pointed falls are held horizontally, and the only real difference lies in the fact that, in *bracteata*, the perianth tube is very short, while in *Purdyi* it is nearly 2 inches in length. The plants are obviously different when growing side by side, and yet it would be very difficult accurately to define the difference between them if it were not for this distinct feature of the length of the tube.

I do not know of any record of other hybrids of *bracteata*, but this year I have had in flower here a dwarf plant which bore six or seven stems, and beautiful pink flowers of the characteristic shape of *bracteata*. The pollen parent I cannot give, as the seed parent would seem to have been fertilised naturally. It was growing in close proximity to both *Douglasiana* and *tenax*, and I incline to think that, to judge from the dwarf, somewhat spreading habit of the foliage, the pollen must have been that of *Douglasiana*. However that may be, the hybrid is certainly far more floriferous than its mother, and a delightful plant for some sunny corner in the rock garden.

I. Hartwegii is one of those species which catalogues describe as of botanical interest, meaning, of course, that they do not wish to be uncharitable to any plant. The small flowers are of a pale straw colour, and two or three are produced on a slender but wiry stem, 4 or 6 inches long. My plants are growing where the seeds were sown in the open, and they are apparently quite hardy, at least in a light soil. They have flowered well both last year and this, and I hope they will consent to give me a fresh stock of seeds before any evil fate overtakes them.

I. chrysophylla, from Oregon, looks a picture of ill-health, and yet, since it flowers annually, I am beginning to think that its yellow leaves are enough to distinguish it from *macrospira*, with which it agrees in many ways. The stem is short, but the flowers are borne upon a long tube over 2 inches in length. They are of a creamy-white, with a few golden veins in the centre of the falls that seem to sparkle in the sun.

I. tenax is so called because of the wiry fibres of its leaves, which the Indians used to twist into twine of considerable strength. The stems rise well above the leaves, and bear comparatively large flowers, which may vary in colour from the palest pearly-grey, through delicate shades of mauve, to a deep, rich, claret tint. This really valuable plant suffers, I believe, from a note as to its cultivation in a certain popular book on the *Iris*, which describes it as thriving in peat kept moist with *Sphagnum* in partial shade. Under these conditions, my plants certainly did not thrive, but in dry sand, in a sunny position, they thrive amazingly and flower well.

For some time, I have been trying hard to solve the mystery of the *longipetala*, *missouriensis*, *tolmeiana* group, but only become more and more puzzled, and must obtain more material before coming to a definite conclusion. The examination of a large number of herbarium specimens collected in different localities has not thrown much light on the subject; but I incline to think that what was first described as *longipetala* has deep-green leaves of lax, almost evergreen habit, longer than the stem, which always bears more than two flowers on pedicels of unequal length, while *missouriensis* was applied to an earlier-flowering plant with somewhat yellow-green leaves which are more or less erect at flowering time, and distinctly shorter than the

stem, which bears only two flowers. This theory, however, received a shock this year, when a batch of seedlings raised from Californian seed, and having the foliage of *missouriensis*, produced the inflorescences of *longipetala*. It is possible that the seed was from plants that had accidentally become cross-fertilised; unless this was the case, it would seem almost impossible to keep up any distinction between the two species. I am endeavouring to raise a second generation from these plants, and the results ought ultimately to throw some light on the question of the validity of the two names.

Iris macrosiphon I have never yet had in cultivation, but from all accounts, and to judge from herbarium specimens, it must be a desirable plant. It varies very much in colour, and is readily distinguished by the long (2 to 3 inches) tube.

I. Douglasiana and *Watsoniana* are obviously very similar, if not merely local forms of the same species. Both have practically evergreen leaves, with pinkish base, that are at their best in winter; but while those of *I. Douglasiana* are narrow and lax, those of *I. Watsoniana* are broad and stiff, and spread in almost horizontal, fan-shaped tufts. A number of seedlings that I have raised here from plants of uncertain origin seem to show that these characters in the foliage are transmitted unchanged, but the plants are in other respects so similar that they hardly deserve to rank as more than subspecies. The colour of the flowers is extremely variable. It may be a deep rich violet with white veinings on the upper part of the blade of the fall, or these markings may be almost wholly absent. Other plants bear flowers of a pale lilac or lavender shade, and yellowish examples are not unknown. One fine large-flowered seedling has almost white flowers, with a faint tinge of lilac and some yellow at the throat, while another is heavily veined with violet on a silvery-white ground, producing a flower not unlike a small *I. longipetala*. Such seedlings flower in one or two years at the most from the time the seeds germinate, and it may be that this fact has only to be more widely known than it appears to be to induce many gardeners to embark on the fascinating pursuit of raising Irises from seed. *W. R. Dykes, Charterhouse, Godalming.*

ASTER DIPLOSTEPHIOIDES.

THIS species (see fig. 22) forms one of a group of three very attractive Himalayan Asters, to which the attention of gardeners may well be directed. The others are *A. subcæruleus*, now well known and extensively cultivated in some districts as a florists' flower, and the new *A. Falconeri*, figured and described in the *Gardeners' Chronicle*, vol. xlvii., p. 398. The flowers of *A. diplostephioides* are borne on unbranched stems 18 inches high: they measure 3 or 4 inches across the petals, the ray flowers being rich mauve with the satiny sheen of *A. sericeus*; the disc flowers are yellow, passing to light orange. The lustrous-green leaves are arranged in a series of rosettes, and extension is by surface runner growths. In my Mendip gardens the plants are not thrifty and flower but sparsely, particularly where the rock comes up near the surface, but in the home nurseries it flourishes in the deep alluvial soil, making rosettes of leaves 9 to 12 inches in diameter and flowering profusely. The illustration (p. 56) shows one of several patches, simply formed by inserting 9 or 12 small rosettes in a square yard of border space, 12 months ago. Treated liberally as to soil and divided annually (in summer by preference), *A. diplostephioides* is capable of giving an amazing patch of bright colour in the border, and of yielding quantities of flowers for cutting. *George B. Mallett, Cheddar.*

CAMPANULA PORTERSCHLAGIANA VAR. MAJOR.

THIS variety of Bellflower, commonly called *C. muralis* in gardens, is a much better garden plant than the type. The flowers are borne profusely in leafy sprays which collectively form imposing mounds of considerable size. The plant is better adapted to the conditions of the hardy plant border than a dry, rock-garden, but where rockeries are arranged on a broad scale, with large soil areas, this *Campanula* will prove very attractive. The specimen illustrated in fig. 23 is a yard in diameter and was planted as a rooted cutting two years ago. It has been a never-varying mound of blue for five weeks, and at the time of writing, despite ungenial weather, it is still attractive. I believe the variety is of garden origin. The flowers are coloured bluish-purple, but there is much more blue than purple. Grown adjacent to *C. muralis*, it at once attracts attention by its vigour and richer colouring, whilst the flowers are nearly twice as large, the finest measuring $1\frac{1}{2}$ inch across the expanded tube. It is suitable for planting in the flower border and grows satisfactorily but less vigorously in a wall-crevice. My finest plants are planted in a rich loam overlying fissured limestone, and they have made a blue mat several square yards in area—a fascinating patch of true Alpine scenery. *George B. Mallett, Cheddar.*

NOTICES OF BOOKS.

DISEASES OF CULTIVATED PLANTS AND TREES.*

MR. MASSEE is so well known as a student of mycology, and his contributions to the science are so important that his new volume is assured of a hearty welcome. Though this volume covers much the same ground as that traversed by his *Text-book of Plant Diseases*, yet it is a worthy successor to that latter admirable work. For, whilst retaining the excellent features of the older work, the new volume is fuller, and, of course, up-to-date. The main work of the book—that of the description of the parasitic fungi, is preceded by a general introduction to the subject, in which the causes of disease, the modes of distribution of fungus-spores, and similar important topics are discussed. The only comment we would make on this part of the book is that the sections on spraying might be extended with advantage. The method of spraying, crude as it undoubtedly is, constitutes the most important means of combating fungus pests which we have at present. Therefore, a text-book which, like that of Mr. Massee's, appeals not only to the student but also to the practical man, should, in our opinion, deal more fully with this subject. Thus, for example, the only kind of lime-sulphur fluid to which reference appears to be made is the "self-boiled" mixture. If, however, we may rely on recent work in America, the self-boiled lime-sulphur fluid is not so good for fruit-tree spraying as the preparation made by boiling the ingredients with water. Nor is reference made to what is proving of undoubted importance to fruit-growers, viz., the lime-sulphur arsenate of lead mixture. We hope that in the next edition Mr. Massee will enlarge considerably the sections which deal with sprays and spraying, and that he will also draw up and include "spray-calendars" for garden and orchard crops.

The bulk of the volume under review is occupied by admirably terse descriptions of disease-producing fungi, descriptions which show at every page that they are drawn by a master hand. Occasional misprints, of course, occur, but for a work which presents so many pitfalls

* *Diseases of Cultivated Plants and Trees.* G. Massee, Assistant Keeper, Herbarium, Kew. (London: Duckworth & Co., 1910.) 7s. 6d. net.

for printers as this, the number of errors is surprisingly small.

We are by no means sure that Mr. Massee has done wisely—though, in so doing, he justifies the title of his book—in including sundry animal pests within its pages. To deal with the diseases of plants due to animals in 26 pages (pp. 534-560) is to attempt the impossible. Mr. Massee's frequent references to the work of others prove that his reading is almost as wide as his own first-hand knowledge. Occasionally, however, we fail to find reference to work which, in our view, is important enough to deserve citation. To give but one or two instances, in the account (p. 441) of Bean anthracnose (Pod Scab) Whetzel's investigations are omitted; nor is reference made to those of Smith and Swingle with respect to winter rot of Potatoes.

We recognise fully that, to include all recent work of importance would increase unduly the size of the book. This, however, might perhaps be met by extending considerably in a subsequent edition lists of the more important researches bearing on the several diseases. A brief chapter on culture-methods would also enhance the value of the book. Details such as these, however, do

bag with a brick or stone inside, and sink it in a tub of water (rain preferable). If given one or two pokes with a stick and the water is stirred up it is fit for use, but should only be used in a weak condition. The same directions apply to liquid animal manure." There are several lists of plants and trees suitable for towns appended, but these, as well as the other parts of the book, would be all the better for revision.

GARDENING FOR ALL.*

THIS practical handbook has already had many things said in its favour, for its usefulness is undoubted. We could have wished, however, that the author had extended his revision to some of the lists of flowers, Sweet Peas, for instance, which is several years belated. The list of 15 varieties of Apples for culinary purposes contains only three late sorts. Nevertheless, the volume is a very trustworthy guide to the beginner in gardening. No better gift could be bestowed on a working man with a garden and a wife, who is also considered by the author. *B.*

WINDOW AND INDOOR GARDENING.†

THIS is a more pretentious volume than the title would lead one to suppose. In addition to



FIG. 23.—CAMPANULA PORTERSCHLAGIANA VAR. MAJOR.

not prevent us from recognising that Mr. Massee has produced a most valuable work, and one which will add to the already high reputation which he has made for himself as a student of mycology. We feel confident that Mr. Massee's efforts on behalf of this science are bound to lead an increasing number of botanists to take up seriously, from the research point of view, this study, the foundations of which were laid in larger part by Berkeley, many of whose discoveries were first published in these pages. The mycologists of this country, though of high ability, are small in number, and in research, as in other contests, numbers count.

CITY, SUBURBAN AND WINDOW GARDENING.*

THIS little book aims at helping the owners of town gardens to make them attractive. The following extract gives a fair idea of the character of the contents:—"Liquid manure.—To make this put a quantity of soot in a small

the usual things included in horticulture for the home, there are chapters on roof gardens, balconies, verandahs, the furnishing of the outside walls of the house with suitable vegetation and floral decorations. It is indeed somewhat bewildering in its scope, and reveals a condition of domesticity in the City that few previously unacquainted with details would credit. Compared with Burbidge's *Domestic Floriculture*, not yet quite out of date in much of its contents, I should be inclined to say that, in spite of a wider purview, it comes short of that work in the lucidity of its remarks and in the value of its plant lists, many of the best house plants being unnoted, and, as in the case of *Aspidistra*, the less suitable species recommended. On the whole, however, it provides a vast amount of information on a fascinating subject. *R. P. Brotherston.*

* *Gardening for All.* By James Udale. With an Introduction by Viscount Cobham. Fourth edition revised, 1910. (Stourbridge: Mark and Moody, Ltd. London: Simpkins.) Price 1s.

† *Window and Indoor Gardening.* By T. W. Sanders. Illustrated. (London: W. H. and L. Collingridge.) Price 2s. 6d. net.

* *City, Suburban and Window Gardening.* By D. Grant McIver. (London: Dawbarn and Ward, Ltd.) 6d. net.

HARDY CRINUMS.

WHEN Crinums were first introduced into this country, they were grown in heat, but after experiments had been made in cold houses, and later in the open air, *Crinum capense* was found to be hardy. It is a fact that finer results are obtained when these bulbs are grown permanently in the open air than when they are confined to pot-culture. The ground where the Crinums are to be planted should be well drained at a depth of 4 feet with broken bricks, clinkers or rubble, and the bed should be composed of porous soil which will not be over-retentive of moisture during the winter. At the same time, Crinums are sometimes seen doing well in heavy, adhesive soil with no drainage whatever. If full-sized bulbs are procured, a hole at least 3 feet deep must be prepared for them, as the largest are often nearly a foot in diameter at the base, and almost 3 feet in length to the top of the tapering neck. It is often advised that they should be planted in front of a south wall, preferably that of a hothouse, but in the counties of Devon and Cornwall this is unnecessary, as they succeed admirably in the open ground far distant from

spikes are from 3 feet to 4 feet in height, and on old clumps that have not been disturbed for many years, 20 to 30 scapes will often appear simultaneously. There is a white variety that is handsomer than the type, but neither is worthy of culture when finer species and varieties are obtainable.

C. MOOREI (syn. *C. Mackennii*, *C. Colensoi*, *C. Makoyanum*, *C. Macowanii*, *C. Schmidtii*, *C. natalense*, *C. ornatum africanum*).—This Crinum suffers from being over-named, and many have purchased it under one of its titles only to find that they already possessed it under another name. This is the species shown in the illustration in fig. 24. The plants are growing in a portion of the public gardens at Torquay known as the Rock Walk. The situation is absolutely sheltered from the north and east by a perpendicular cliff over 100 feet in height, which is immediately behind the long bed in which the Crinums are growing. In this bed there must be fully 300 flowering bulbs. The spot is exceptionally favoured, and on the cliff face grows *Plumbago capensis*, which flowers profusely; *Cestrum elegans*, which often blooms as late as November; while *Stauntonia latifolia* and *Physi-*

allowed to grow into large clumps, it bears several flower-spikes at the same time. Its leaves are of a deeper green than those of *C. Moorei*, being also glossy and channelled. They are 4 feet in length and 4 inches in breadth. The flowers of the type are of a deep-rose tint, and, in vigorous plants, are borne in umbels of from 10 to 15, and are about 6 inches in diameter. There is a pale flesh-coloured form known as *intermedium*, and a very lovely, pure-white variety, *C. Powellii album*, this being the handsomest of all the Crinums. It takes more after the pollen-parent than does the pink type, and has larger and better-shaped flowers.

C. YEMENSE.—This is a recently-introduced species, and differs from all the other Crinums in being deciduous. Its leaves are somewhat like those of *C. Powellii* but shorter. It is a beautiful plant, producing more flowers on a scape than any other of its race. The blossoms are white, and are borne on scapes about 2 feet in height. As many as two dozen flowers are sometimes carried on a single scape. It is perfectly hardy in the south-west. *C. crassifolium*, syn. *Van Tubergen*, and *C. Schimperii* appear to be somewhat similar to *C. capense*, but they are finer forms, though they do not equal *C. Moorei* or *C. Powellii*.

Any amateur anxious to embark on the culture of Crinums may be advised to limit his selection to *C. Moorei album*, *C. Powellii*, *C. Powellii album*, and *C. yemense*. *Wynndham Fitcherbert*.



FIG. 24.—CRINUM MOOREI FLOWERING OUT-OF-DOORS IN DEVONSHIRE.

walls. They should be abundantly supplied with water and liquid fertilisers during the late spring and summer months, and, on sloping ground, a saucer-like depression should be made round the stems to prevent the water from running away. The leaves are almost invariably killed by frost in winter, but the plants break into growth again in the spring. Specimens left alone for some years develop into enormous clumps, and gain strength each year. The bulbs work deep into the ground and become of immense size, often, in the case of *C. Powellii*, throwing up flower-spikes nearly 6 feet in height. The following kinds are best known:—

CRINUM CAPENSE (syn. *C. longifolium*, *Hippeastrum longifolium*, *H. longiflorum*).—This species has long, tapering, glaucous leaves, often over 5 feet in length, and it bears long-tubed, pink flowers in umbels of from 6 to 12. The blossoms are about 6 inches in length, 4 inches across, and sweetly scented, but as they droop and are never fully expanded, they are inferior in attractiveness to the flowers of others kinds. The flower-

anthus albens both blossom and bear fruit freely. By some, *Crinum Moorei* is held to be tender, but in the south-west it is absolutely hardy and requires no protection. It has roughish leaves of a light-green colour, about 3 feet in length and 5 inches in breadth, and it carries its handsome, rosy-pink flowers in umbels of from 10 to 12, on tall stems. The blossoms are widely expanded, and are often fully 6 inches in diameter. The white variety *C. Moorei album* is a very beautiful plant, precisely similar to the type, except that it bears pure-white flowers. There is also a variegated form of this Crinum, known as *C. Moorei variegatum*, which is said by some writers to be too tender for outdoor cultivation, but with me it is quite hardy. The flowers are said to be very beautiful, but my specimen has not as yet bloomed. It is valuable for its handsome foliage, the leaves being striped with broad, longitudinal bands of white.

C. × POWELLII.—This is a beautiful hybrid, raised by fertilising *C. capense* with the pollen of *C. Moorei*. It is quite hardy, and, when

NOTES ON APRICOT CULTURE.

ALTHOUGH the weather conditions have not been of the best for Apricots, for this fruit revels in an abundance of sunshine and warmth, yet the trees have made good growth, and they have plenty of clean foliage. Caterpillars have not given much trouble. Whether this is due to persistent spraying of the trees and walls every winter, I am not prepared to say, but certain it is that these pests are conspicuous by their almost complete absence this season.

The chief thing demanding attention just now is to stop or pinch back the superfluous growths to four or five buds, but preserving any shoots required for replacing branches which have died or appear to be useless, or for filling vacant spaces in other parts of the tree. Some varieties are prone to produce more spur growths than are desirable. If these are merely cut back, time after time, the spurs become much crowded, and this necessitates considerable thinning. This condition may be avoided in great measure by thinning out the young shoots, or, in other words, pulling them out in the same manner as in the disbudding of a Peach tree. The same principle may be applied to both Pears and Plums against walls with equally good results.

Young trees must have special attention paid them in this direction, so that ample provision is made for furnishing them both with main and subsidiary branches. The surplus should be pinched back to form spurs.

The next thing is to thin the fruits down to safe limits in all cases where the crop is an abundant one. It is not, I think, a good one generally, but those who were fortunate enough to have saved the blossoms from frost, and are now enjoying the spectacle of seeing the trees well loaded, should see to it that the energies of the trees are not overtaxed. If thinning is judiciously carried out every year, Apricots grown in suitable conditions as regards climate, position and soil will bear as regularly as Peaches, but the trees must be given adequate protection while in bloom. With respect to the actual thinning, it should be mentioned that one fruit to every 9 inches square of wall space covered by the tree will be an ample allowance. The smaller sorts or such as are usually employed for preserving purposes may stand as near together as 6 inches apart each way. Twins and triplets should be reduced to one, and the aim should be to have the fruits as evenly distributed over the tree as

circumstances permit. If any exception is made to this rule it should be in favour of extra vigorous branches, which may be allowed to carry rather more fruits than would otherwise be advisable.

If the alleys have not been pricked up and mulched with half-decayed manure, this should be done at once. The roots must also be kept well supplied with water, for the fruits will not swell freely if the border is in any way lacking in moisture. A good stimulant consisting of 3 lbs. superphosphate of lime, 1 lb. sulphate of ammonia, and 1 lb. of sulphate of potash, mixed together and applied at the rate of 2 ounces per square yard, may be applied prior to affording water. Another such dressing may be given when the fruits are as large as Walnuts.

The above formula may be varied by substituting bonemeal for the superphosphate and muriate of potash for the sulphate of potash. Another mixture is made by taking 1½ lb. each of superphosphate of lime and bonemeal and 2 lbs. of muriate of potash, mixing them together, and applying as above. Guano, dried blood, and nitrate of soda may also be employed with beneficial results, but manuring of any kind must not be overdone. Where liquid manure is plentiful, no better stimulant than this can be had for Apricots when the fruits are swelling towards maturity. A. W.

The Week's Work.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Surrey.

Calanthe.—*Calanthes* of the *C. vestita* and *C. Veitchii* section have filled the pots with roots, and numerous roots are spreading over the surface of the soil. They require an abundance of water both at the root and in the atmosphere, the latter especially on bright, sunny days. It is desirable also to surface the top roots with rough, yellow loam, mixing with it some fine, dry cow manure and small crocks. After they have permeated the fresh soil, liquid manure made from cow dung may be given alternately with clear rain water. The liquid manure should be passed through a fine strainer, in order that it may be used as clear as possible, and, therefore, not clog the compost. These *Calanthes* need a comparatively high temperature, especially where the atmosphere of the house or position is naturally damp. At Burford the night temperature never falls below 70°, and more often than not at this season it is nearer to 75°. Low temperatures accompanied with moisture is one of the principal causes of "spot" so often seen on the pseudo-bulbs and leaves of these plants. If the *Calanthes* are grown amongst stove plants they should be placed altogether near the roof glass, where no drip or water from the syringe can reach them. When grown in a lean-to house with a south aspect, the new growths often become drawn toward the light, and thus form themselves into a semi-arching position, instead of growing erect. In order to prevent this it is advisable to tie them back while in the young state to neat sticks, using broad, flat pieces of raffia so that they will not cut or mark the growths. The *C. Regneri* section are somewhat later in making their growth, but when they become well rooted they will need similar treatment to the varieties of *C. vestita*. The pure white *C. veratrifolia* is an evergreen species which has passed out of flower, after being in full beauty for about two months. The young growths have already made considerable progress, and, any repotting the plants may require should be done at once, potting them like ordinary greenhouse plants, with the surface of the soil just below the rim of the pot, the compact being of a firm but porous nature, such as fibrous yellow loam, *Osmunda* fibre, leaf-mould, and *Sphagnum*-moss in equal parts, with the addition of a moderate amount of small, broken crocks. Give the plants plenty of root room, and about 2 or 3 inches of crocks for drainage. After the potting the plants should be placed in a well-shaded corner of the Cattleya-house; they must not be afforded much water until the roots are seen pushing freely through the compost. Other evergreen *Calanthes*, such as *C. japonica*, for which a cool intermediate-house is most suitable, are now sending up their flower-spikes,

and will require an abundance of water at the root till the flowers open, when the quantity may be considerably lessened.

Phaius, &c.—The different sorts of *Phaius* as *P. Wallichii*, *P. Sanderianus*, *P. Blumei*, *P. grandifolius*, *P. Mishmensis*, *P. maculatus*, *P. bicolor*, and the hybrids *P. Cooksonii*, *P. Norman*, *P. Marthae*, *P. Wiganianus*, &c., also *Phaio-Calanthe Arnoldiae*, *P.-C. Colmanii*, *P.-C. Sedenii*, *P.-C. irrorata*, &c., and the distinct *Phaio-Cymbidium Chardwarensis*, having started to grow, may be repotted if any of them are in need of fresh compost or larger pots. They all root well in the mixture already mentioned, and they may be potted in the same manner. They need similar cultural treatment to *Calanthe veratrifolia*. During their season of growth a decidedly moist atmosphere should be maintained, which may be done by damping well between the pots several times daily, and lightly spraying the plants overhead when the weather is suitable, but should the point of the leaves become black or discoloured, the moisture should be lessened. The pseudo-bulbs and roots being liable to attacks of mealy bug and scale, they should be frequently examined for these pests. *Phaius tuberculatus* may also be repotted, using rather more *Sphagnum*-moss than for the other species and hybrids. The plant requires more heat and moisture than its congeners, and should be kept in a shady position at all times. Small, yellow thrips are the worst enemies of this species.

THE FLOWER GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Hertfordshire.

Ornamental grasses.—These comprise many different species of Grasses especially useful during the dull months of the year, when decorative material is difficult to procure. They include species of annual and perennial nature, varying greatly in their habit, some only a few inches high, others many feet. Those of annual duration make interesting subjects when sown on a narrow border in the garden, and require but little attention after sowing. A warm, well-drained soil suits them best, and for preference a site facing S.W. or W. Frequent stirrings between the rows with the Dutch hoe will do much to stimulate their growth, and hand-weeding, if necessary must be carried out with caution. There are many varieties, but a few of the best known and most useful are *Agrostis* in variety, *Anthoxanthum gracile*, *Avena sterilis*, *Brizas* in variety, *Brizopyrum siculum*, *Bromus brizaeformis*, *Chloris zarbata* and *elegans*, *eragrostis* in variety, *Hordeum jubatum*, *Lagurus ovatus*, *Leptochloa gracilis*, and *Pennisetum villosum*.

Tropaeolum speciosum.—This climber makes an impressive sight when in full flower, but it is frequently very difficult to establish in the south of England. In the north, and especially in Scotland, the species thrives so well that it may be seen flowering in the greatest profusion on many cottages. Perhaps it is never so effective as when the shoots are allowed to ramble over some dark green background, such as is provided by *Rhododendrons*, *Hollies*, or *Yews*, and in such a position that whilst the growths and flowers are exposed to the sunshine, the roots remain in a cool and shaded place. This method of cultivation may well be tried by anyone wishing to succeed with this delightful plant; the presence of the *Tropaeolum* does not seem to injure the supporting shrubs in any way, but as soon as the growths become unsightly, being thoroughly ripened, they may be cut off and taken away.

Carnations.—Border plants will now need much attention in regard to tying up the flower-spikes. In the event of dry weather give thorough soakings of water, and keep a loose surface on the bed by frequent hoeings. Many growers will soon commence layering the plants for next season's stock, though this may easily be deferred for a few weeks if necessary. This work should, however, be done sufficiently early to allow the plants a good chance of becoming well-established before the approach of less favourable weather. If the ground is very hard, loosen it with a fork, and employ a mixture of fine soil, preferably loam, and leaf-mould with a good addition of sharp river sand or other of a gritty nature, to place the layers in. For some time afterwards, especially if the weather is dry, occasional dampings in the

morning and evening will greatly assist the layers to form roots.

Pinks.—These have passed out of flower, and will need looking over and the flowering-stalks removed. The present is a good time to propagate these plants by taking off the cuttings or pipings, as they are sometimes called, and inserting them in a sandy compost in a cool, shaded position, such as is afforded by placing a hand-light under a north wall or hedge. For general purposes this method is to be preferred to layering, as the growths of many are of such frail nature that these are soon broken, though with choice varieties of moderate growth layering may be more the reliable practice.

Pentstemon.—*Pentstemons* are now fast pushing up their flower-spikes. Use the Dutch hoe frequently between the plants to keep them free from weeds and to stimulate growth. *Pentstemons* make splendid subjects for bedding purposes; they embrace almost every shade from pure white to deep purple. Especially valuable also for massing is the variety *Newbury Gem*, and its sports.

The summer bedding plants.—These are now becoming established, and hand weeding is the only means of ridding the beds of weeds. It will be necessary to check the growth of many of the stronger growing plants where it is necessary to preserve the outline, as in carpet bedding. Tying must be attended to, especially in respect to the more robust and quick-growing plants in the sub-tropical border. Broad strands of raffia only should be used, and they must not be tied too tightly. Attend to the pegging down of the growths of the various plants used for carpeting, and remove decayed flowers and foliage in order to make the beds appear as tidy and fresh as possible. Beds laid out in grass should have the verges cut frequently with the edging shears. In hot, dry weather watering with a rose-can is best performed either in the evening or after the dew has evaporated in the morning.

PLANTS UNDER GLASS.

By JOHN DONOGHUE, Gardener to JOSEPH PICKERSGILL, Esq., Bardon Hill, Westwood, Yorkshire.

Stephanotis floribunda.—The flowering season of this plant may be prolonged if the roots are supplied with frequent top dressings of some approved chemical fertiliser and occasional waterings with clear soot water. As the season advances, thin out the weak growths, to secure for the permanent shoots full exposure to the light and air. Propagation may be effected from shoots inserted singly in small pots and plunged in a brisk bottom heat. They will root readily at this season, and later may be wintered on a shelf near to the glass, repotting them as they require more root room. Although young plants of *Stephanotis* do not flower so freely as the older specimens, they produce flowers of excellent quality.

The Fernery.—This house will now require a general overhauling, with a view to re-arrangement. Should any plants require repotting, this operation may be completed during the present month. Plants which are allowed to remain in the same pots should be grouped together, so that they may be watered with clear soot water and liquid from the farmyard. Many of the newer varieties of *Nephrolepis exaltata*, such as *Todeaoides*, *Pierstonii*, *elegantissima*, and *Whitmannii*, are developing robust fronds; these should be looped carefully with thin green raffia-tape to a central stake. As the season advances, the atmosphere of the Fernery may be kept less moist by allowing a free circulation of air, the ventilators remaining open a little during the night.

Palms.—In the case of large specimens, autumn potting is to be recommended, in order that the plants may have ample time to recover before the spring. A selection of plants for potting ought to be made each year, so as to avoid having to use plants indoors during the winter which have been recently repotted. A suitable compost is one consisting of fibrous loam and peat in equal parts, with charcoal, lime rubble and coarse sand. Examine the roots previous to repotting, and if any are removed, take particular care the work is carried out with a sharp instrument. *Phoenix Reclivii* is specially suitable for house decoration; it has a light, graceful appearance, and it keeps a long time in a healthy condition.

FRUITS UNDER GLASS.

By B. GOODACRE, Gardener to Sir ERNEST CASSEL, G.C.B., Moulton Paddocks, Newmarket.

Pineapples.—At this season little fire-heat ought to be necessary to maintain the temperatures needed, but the inclement weather lately experienced has occasioned extra care and attention in this respect. During hot weather, air may be admitted freely in the middle of the day; at other times, when the outdoor conditions are adverse, the temperatures may be kept up by fire-heat and enough ventilation allowed to prevent a stagnant atmosphere.

Succession plants.—Those plants which were potted on as advised in a previous Calendar will now have filled their pots with roots, and may be placed in the fruiting pots at once. Use the same sort of compost as before, and see that it is warmed to the same temperature as the house. Take particular care not to disturb the ball of roots and soil, leaving intact any parts of the drainage which have become attached to the roots. Syringe the plants overhead two or three times daily in the form of a fine spray. If heavily syringed the water collects at the base of the leaves and encourages the production of suckers at the expense of the main crown. Suckers which were twisted off the parent plant last month should now be ready to pot up, using pots from 3 inches to 5 inches in diameter, according to the size of the sucker. After the potting, plunge the pots to the rim in the hot-bed. Give the plants ample room and keep them well up to the glass. A slight shade may be necessary on bright days until they are established in the pots. A spell of hot, sunny weather may cause many fruits to ripen at once, but this can be avoided and a succession maintained by removing some of the plants to a cooler house or fruit-room. Plants with fruits now swelling will need a hot moist atmosphere and generous supplies of liquid manure, which may be continued until the "pips" show colour, when a cooler and drier atmosphere will be necessary to ripen the fruit.

Insect pests.—White scale is a most troublesome pest, for it multiplies rapidly in the tropical atmosphere of a Pine stove. Examine the plants at regular intervals, and sponge them with some approved insecticide on the first appearance of the pest.

Melons.—On p. 21 under the heading of Melons, the directions after the eighth line refer to plants cultivated in frames.

THE HARDY FRUIT GARDEN.

By A. R. SEARLE, Gardener to the Marquis of NORTHAMPTON, Castle Ashby, Northamptonshire.

Strawberries.—If the ground has not yet been prepared for the planting of a few early plants, it should be got in readiness without delay, so that it will have settled nicely before the plants have to be put out. Land which has been deeply dug and well manured for early Peas will be suitable. When the Pea haulms and any weeds that may be present have been cleared off, such ground will need but little preparation excepting that it may be given a liberal dressing of soot, which should be forked in lightly. If ground of this nature is not available, it will be necessary to trench or double dig a plot for the Strawberry plants, working in a liberal amount of well-decayed manure; the ground should be allowed to settle and be made quite firm by treading, before putting out the plants. The distance apart of the plants should be determined by the vigour of the variety; some varieties make much more foliage than others; the variety Leader, for instance, does not need so much space as Royal Sovereign. A suitable distance to plant most varieties is 2 feet or 2 feet 6 inches apart each way; some growers prefer to plant much closer in the row, and after the crop has been gathered in the following season, they take out every alternate plant; this method may be recommended where space is limited. Give the young plants a thorough watering on the night previous to planting. Make the soil firm round about the plants as the work proceeds, and, if the soil be left a little concave near the plants, water can be more conveniently applied to the roots. Apply copious waterings in dry weather, and sprinkle the plants overhead each afternoon.

The packing of soft fruits.—If it is desired to send Strawberries some considerable distance, the berries should not be allowed to become over-ripe; they are best gathered late in the evening. Choice Strawberry fruits should be packed in shallow boxes one layer deep; a convenient

size is one large enough to take three or four dozen fruits; they should be packed singly in Lime-tree leaves or in their own foliage, which should be slightly withered before commencing to pack. Place the fruits closely together in a slanting position in the box, with the stalks uppermost; this will enable the person unpacking the fruits to take them out without actually touching them; a good packer will not allow his hand to touch the fruit in the packing process. There must be no vacant places in the box when all the fruits are in, or the berries will be shaken about in transit. Raspberries travel well when packed in shallow punnets wrapped singly in Lime leaves; two or three layers of fruits may be placed in each punnet, and the punnets packed closely together in a box just deep enough to take them. For culinary fruits, jars or wide-mouthed bottles are convenient; these can be securely fastened over and packed in the vegetable hamper.

THE KITCHEN GARDEN.

By JOHN DUNN, Kitchen Garden Foreman, Royal Gardens, Windsor.

Peas.—The latest sowing of Peas should now be ready for earthing up. The stakes for this batch should be as strong as possible, and they should be pushed well into the ground, as the autumn winds often prove injurious to late Peas. The plants should be given liberal treatment from the beginning, thinning them out well whilst small as a precaution against mildew. If dry weather sets in, a good mulching of dung should be applied before the ground becomes very dry, in order to avoid having to give cold water to the roots, which is a fertile source of mildew.

Carrots.—The Carrots sown for autumn use should be thinned to 3 or 4 inches apart, and a sprinkling of soot should be applied on the approach of rain. Keep the Dutch hoe in use between the rows. Where young Carrots are in demand a sowing of the variety Early Gem or Scarlet Horn may still be made on a warm, south border.

Mint.—Overgrown Mint should be cut down to the ground, and allowed to make fresh growths for use in autumn. After the bed has been cleared of the old foliage, a topdressing of fine soil should be applied to give the bed a clean and tidy appearance. A plantation to be treated in this manner should be made on a north border or some other situation not exposed to the mid-day sun. Plant the roots in rows at 15 inches apart and water freely if the weather is at all dry.

Endive.—Make a good sowing of Batavian Endive to produce supplies through the winter months. Endive sown a month ago will now be ready for planting out.

Lettuce.—Small sowings of Lettuce should be made each week from the present time until the end of August. As the young seedlings become large enough, they should be transplanted on a south or west border, so that they may be left unprotected as late in the season as possible. These late batches of Lettuce should be planted extra thickly, and, as the season advances, all decaying leaves should be removed from the plants. Use the Dutch hoe freely between the rows to keep the soil clean and sweet about the plants. I have found Chelsea Imperial Cos a good variety for autumn use, as it stands well into November if the plants are covered with box frames when frosts set in. The variety All the Year Round is also a good sort, and may be had the greater part of the winter if cold frames are available.

Asparagus.—Seedling Asparagus in rows should be thinned sufficiently to ensure the full development of the crowns, and, a sprinkling of agricultural salt may be given between the rows to prolong their growth as late into the autumn as possible. The same treatment may be applied to the permanent beds, and a good watering with liquid manure given two or three times during the growing season. Keep the beds free from weeds by the careful use of a draw hoe between the plants or by picking over the surface of the beds with the points of a fork previous to applying manure water. Manure may also be dug into the alleys between the beds any time during the autumn to lighten and enrich the soil for surface dressing next spring. To secure the plants from being broken by rough wind, stout stakes should be driven into the ground along each row, and a wire securely fastened to the

stakes; the plants may then be tied up with matting, or whatever material is used for the purpose.

THE APIARY.

By CHLORIS.

Introduction of queens.—To introduce a queen successfully is sometimes a very easy task, and at others it is very tiresome. Everything seems to depend upon several conditions, e.g., when there is a good honey flow a queenless colony seems to accept a queen more readily than when there is a dearth. This being the case, it is well to feed the bees, if the flow of honey is not satisfactory owing to wet or very dry weather. A queen that has come through the post is not so easy to introduce as one which does not arrive in a fatigued state. Should a queen be received from a stranger, other care is needed, for, with a queen, several workers and food are sent, and disease may be introduced into the apiary. To avoid risk, let the queen and workers out of the mailing cage in a room with a closed window, and perform the operation near the window. As soon as the occupants walk out on the window pane kill the workers and immediately destroy the cage, for a queen has never been known to carry the contagion of foul brood. Then wash the hands with a carbolic soap, keeping the queen well under observation. This done, re-cage her.

Removal of old queens.—Remove the queen to be dethroned a few hours before introducing a new one. If the new queen is one of your own, remove her from the hive about half an hour before dusk and release her in front of the entrance or at the top, allowing her to run down. By taking the new queen from her own hive half

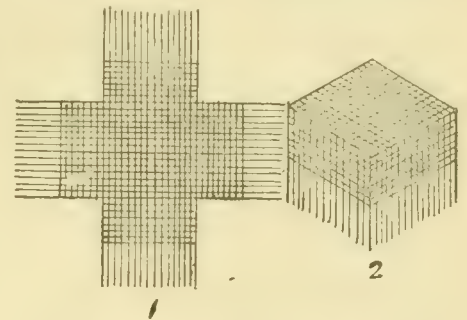


FIG. 25.—CAGE FOR QUEEN BEES.

1, The cage cut and ready for bending. 2, The cage folded—the unravelling part is to press into the comb.

an hour before introduction, she will be hungry, and, instead of running hither and thither on the comb and thus creating a disturbance, she asks for food; this her retinue will give her, and perhaps caress her with their antennæ. Should the bees commence to cluster round her and cling to her—this is known as balling—it may be known that the colony is not going to accept her readily. Give the ball a puff of smoke, taking care to keep the smoker far enough off for the smoke to be cooled by the air, for hot smoke will only anger the bees. When this takes place rescue the queen as quickly as possible and cage her. A cage for the purpose may be made from a piece of wire cloth about 9 inches square. Cut out the corners about 1 inch and unravel half an inch, and then bend. Fig. 25 (1) shows the cut corners and the unravelling, and fig. 25 (2) shows the cage completed. Cage the queen on a comb containing hatching brood, also a few cells of honey, first shaking off the bees. The young bees as they hatch will, of course, accept the queen. In 48 hours a hole may be partly cut through the comb from the opposite side and the bees will gnaw out the remainder, leaving the queen free to walk out, and her movements will probably be unimpeded by the colony.

A simpler matter.—Whenever a queen is introduced into a hive which has been made up of frames of hatching brood from several hives, there is never any difficulty in the introduction. Under these conditions, the entrance is closed and plenty of quilts are put on, the operation being performed in the middle of the day when the weather is warm. Should the weather be cool at night it will be well to take the hive indoors at night. In about a week, the hive may be placed in its permanent position, but only open the entrance sufficiently wide for one bee to pass at a time.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Special Notice to Correspondents.—The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

Letters for Publication. as well as specimens of plants for naming, should be addressed to the EDITORS, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Local News. Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Illustrations. The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens or of remarkable plants, flowers, trees, &c., but they cannot be responsible for loss or injury.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editors to see.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, JULY 26—

Nat. Carnation and Picotee Soc. Exh. at R.H.S. Hall, Westminster. Yorkshire Agr. Soc. Intern. Sh. at Roundhay, Leeds (3 days).

WEDNESDAY, JULY 27—

Leamington Fl. Sh. (2 days). Southampton Carnation and Sweet Pea Sh. Sweet Pea Exh. Borough of Gillingham, Kent (2 days).

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich—62.4°.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, July 20 (6 P.M.): Max. 63°; Min. 57°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, July 21 (10 A.M.): Bar. 29.7; Temp. 66°; Weather—Dull.

PROVINCES.—Wednesday, July 20; Max. 64° Guildford; Min. 53° N.E. coast of Scotland.

SALES FOR THE ENSUING WEEK.

MONDAY, JULY 25—

Freehold Nursery, Residence, Cottage and 11 acres land, at the Mart, London, by Protheroe & Morris, at 8.

**Chief
Officer of
L.C.C.
Parks.**

The post of Chief Officer of the London County Council parks is again vacant. The advertisement of the Council inviting applications for the post a copy of which we published last week—takes pains to set out at length the qualifications which, in the opinion of those responsible for its drafting, the successful candidate should possess. It is gratifying to find that from these qualifications a knowledge of practical horticulture is not excluded. But lest this should cause undue satisfaction it must be added that, according to the advertisement, such knowledge is not an essential condition for success. The argument of the advertisement would appear to run somewhat as follows:—"A Commander-in-Chief is required. It is desirable, though not essential, that applicants should possess a knowledge of military operations. So much administrative work is nowadays attached to the part of commander-in-chief, however, that a power of directing in the field the operations of his general of division, is not insisted upon. Accountants, kindly note."

That this is no travesty of the attitude of the Council is evident from the fact that that body, before it advertised the post, was prepared to fill it from among its own officers,

other than those, of course, who are in any way connected with park management. The first choice of the Council, it is said, lighted on a member of the educative staff of the L.C.C. who refused it on the grounds that his present salary was larger than that attached to the post of the Chief Officer of Parks.

We need not review in detail the arguments we advanced last February in support of the contention that no man without technical and practical knowledge of park management is capable of properly carrying out the duties of Chief Officer. That he must have powers of organisation and administration and a capacity for the management of men no one disputes; but that these powers alone, without a knowledge of horticulture, will make the officer a bureaucrat and not an initiator is self-evident to all experienced men. It is the importance of the occasion and the past action of the Council that make it necessary to repeat the obvious fact that the head of the parks must be an expert in park management. The work which a properly-qualified horticulturist, acting in conjunction with the several park superintendents, could do in ameliorating and diversifying the London parks is enormous. What is required for this purpose is trained intelligence, such trained intelligence that none but the horticulturist can supply.

Now that the post is advertised publicly we advise horticulturists who have the necessary qualifications to become candidates for the post. The unwisdom which has guided the L.C.C. in the past cannot endure indefinitely. There is a chance that wiser councils may prevail. But whether this be so or not, it is the duty of horticulturists to do all that is within their powers to prove that there are among our ranks men who are in every way qualified to hold this post. If, in spite of this demonstration, the Council fails to appoint a properly-qualified man it will not be the fault of the horticulturists. In such an event we must appeal to the public to judge between them and the London County Council.

**Home
Reading.**

We direct the attention to two publications issued by the Cambridge University Press in connection with the celebration of the twenty-first anniversary of the foundation of the National Home Reading Union.

Everybody, young or old, will find much to interest them in Mr. George Redford's little book entitled *The Faculty of Reading**, though no doubt what will appeal most forcibly to those who live in rural districts is the account which it contains of the various efforts made by the Society to cultivate the habit of reading in all sorts of conditions of men and women whose lives are lived in the comparative isolation of the country. The great towns have their well-equipped libraries, but the villages, except in isolated cases, have no collections of books. Yet the love of reading is confined to no class. Every observant person has met with men who, in spite of great obstacles, have found means to satisfy their craving for reading. It cannot be doubted, therefore, that the number of people who would become readers of good literature is very considerable, if only the opportunity of

discovering the difference between good and bad were put in their way.

The young man who is conscious of the fact that many books are nothing but trash, and yet who has had no opportunity of learning how to discriminate between the valuable and the worthless book, will find the perusal of the pamphlet entitled *Our Inheritance*† of no little assistance in cultivating this desirable faculty. Not only will it prove to him by simple and apt illustration how splendid is the literature of this country, but also—and this is a point of the first importance—how much more interesting are the books written by great men than are those written by small men. From another point of view we commend the first-mentioned book to our younger readers. There is an art of reading—a method of attacking a book—just as there is a method of attacking a job. This method, which has for its result the getting of the goodness out of a book in the minimum of time, is one which only comes by experience. The man who has once learned the art never again scoffs, with the cynicism due to ignorance, at the value of books. He has learned to use them. Some of the books he thus starts out to use he scans quickly, extracting here and there a hint, and afterwards puts them aside for ever. With others, he keeps up an acquaintance, taking an occasional pleasure in their society. Some few become his friends in whose company he passes serene and happy hours.

It is a lack of this power of using books to the best advantage that exposes many book-lovers to the charge of being mere bookworms. He who knows how to use them is rendered thereby a more efficient man.

The American is not generally regarded as a visionary, and yet the Americans read more than any other people. In America, the country of vast distances, systematic efforts are being made to mitigate the isolation of the people in the country, and in these efforts the encouragement of reading takes a prominent place. There the State intervenes through the University. Thus in the State of New York the University of Cornell has a special department devoted to the dissemination of "literature" to the farming community. Not only does the farmer receive pamphlets bearing on his work, but the farmer's wife is also on the "mailing list" and may receive week by week bulletins which, if not exactly of a literary value, help her in her house-work and in her garden. The farmer's children are not forgotten either; to them also are sent printed helps to Nature study. It is true that this attempt on the part of the State to break down the isolation imposed by geographical conditions takes the form of "literature," which is largely of a technical, agricultural form. That, however, need not disturb anyone but the pedant: for a man or woman may become cultivated at least as well by a study of the art and science of agriculture as by that of any other branch of learning. We hope at a subsequent date to draw particular attention to this work of the State Universities of America. Here we refer to it only to demonstrate that the task which the National Home Reading Union has undertaken is one which in one form or another is recognized by a progressive State to be not the least of its duties.

* *The Faculty of Reading*, by George Redford, M.A. (Cambridge: University Press.) Price 1s.

† *Our Inheritance*, by C. L. Thomson. (Cambridge: University Press.) Price 6d.

JAPAN-BRITISH EXHIBITION.—Messrs. KELWAY & SON inform us that they have been awarded a Gold Medal for their exhibit of plants in the grounds of this exhibition.

"FRENCH" GARDENING EXHIBITION AT REGENT'S PARK.—Under the auspices of the *Daily Mail*, an exhibition of "French" gardening was opened at the Royal Botanic Gardens, Regent's Park, on July 18, and will remain open to the public until the evening of August 1. The exhibition consists of about a quarter of an acre of ground facing between the south-east and south-west, laid out in the same manner as such gardens around Paris. The exhibition is intended to show the aspects of intensive cultivation at various periods of the year, from the making of the hotbeds to the mature crops. It is shown how Lettuces are sown under cloches, how they are transplanted later into other beds, in which Radishes or Carrots, or both, have been sown in advance; or how they are placed in the spaces between other Lettuces nearing maturity. The beds in which Carrots, Cabbage Lettuces, and Cauliflowers are growing simultaneously attract a good deal of attention, and visitors show interest in seeing the crops arranged for succession, and yet not interfere with each other. In the frames, examples of Cucumber and Melon growing are given, and, if fine weather prevails, there will be a good display of produce during the next week or so. Besides the frames and hotbeds, there are open spaces in which Cos Lettuces, Tomatos, Aubergines, Marrows, Strawberries, Violets, Celery, and other crops are growing—this portion of the garden being designed to show that, at certain seasons, neither lights nor cloches are necessary. An oil engine for pumping water, crates for packing the produce, specially-designed market wagons, and an excellent packing shed are other features of the show. Each day of the exhibition at 3 p.m. a lecture on some phase of "French" gardening is given by Mr. JOHN WEATHERS (author of *French Market Gardening*), who explains the various methods adopted by the French maraicher to secure a rapid succession of crisp and succulent salads.

"THE BOTANICAL MAGAZINE."—Illustrations and descriptions of the following plants appear in the issue for June.

BEGONIA MARTIANA VAR. **GRANDIFLORA**, tab. 8322 (see also p. 64).—This is a handsome tuberous-rooted Begonia with single, rose-coloured flowers having a whitish centre. It is described as a garden race of *B. Martiana*, Link and Otto, a native of Mexico, which the late Mr. A. DE CANDOLLE considered to be itself no more than a variety of *B. gracilis*, KUNTH. Mr. ROLFE, however, has found it necessary to treat the plants as distinct species. *B. gracilis* it is said is always a smaller plant than normal *B. Martiana*, with more slender and never strictly erect stems, while it has more divided leaves and a different inflorescence. *B. Martiana* var. *grandiflora* grows about 2 feet in height and flowers freely in July.

IRIS CLARKEY, tab. 8323.—This is the species described by Mr. W. R. DYKES in *Gardeners' Chronicle*, 1909, vol. xlv., pp. 3 and 36, as *Iris Himalaica*.

PHILADELPHUS DELAVAYI, tab. 8324.—This is a species of *Philadelphus* which was first introduced into European gardens by the Abbé DELAVAY, who sent seeds from Yunnan in 1890. It was again collected in 1904, by Mr. H. WILSON, and the plant now figured in the *Botanical Magazine* was raised from seed which Mr. WILSON introduced into Messrs. VEITCH'S Nursery. Mr. HUTCHINSON has doubts whether it should be considered specifically separable from

the Indian *P. tomentosus*, WALL., for the salient differences are only to be found in the greater degree of tomentum on the upper surface of the leaves, and the smaller fruits of this the Chinese representative of WALLICH'S plant.

ARISTOLOCHIA MOUPINENSIS, tab. 8325.—This hardy species was first discovered by PÈRE DAVID in Western China. It was again collected by Mr. E. H. WILSON on behalf of Messrs. J. VEITCH & SONS, at an elevation of 6,500 feet above sea level. The species flowered in Messrs. VEITCH'S nurseries at Coombe Wood, in June, 1908, and 1909, and the *Botanical Magazine* figure has been prepared from Coombe Wood materials. The plant so nearly resembles *A. Kämpferi*, that Mr. C. H. WRIGHT thinks that it may eventually prove that these two plants are conspecific. The perianth tube is pale green outside, $1\frac{1}{2}$ inch long, abruptly curved, swollen in the middle, narrowed both to the base and the apex, hirsute without, yellow within. The limb is obliquely three-lobed, $1\frac{1}{4}$ inch across, yellowish, with red markings inside, and greenish towards the margin. The plant is perfectly hardy at Coombe Wood, and grows well in a loamy soil in a sunny position. No pruning is required beyond the removal of any weak or decayed wood.

RHODODENDRON FLAVIDUM, tab. 8326.—This is the plant described by Mr. W. BOTTING HEMSLEY in *Gardeners' Chronicle*, 1910, vol. xlvii., p. 4, as *R. primulinum*, Hemsl. Mr. HEMSLEY now states that an examination of better material has satisfied him that there are no sufficient differences to separate the plant from *R. flavidum*, inasmuch as the form of the calyx lobes, the length of the corolla tubes, and the relative length of the stamens and corolla are by no means constant. In any case, the species is a welcome addition to the scanty group of species of *Rhododendrons* with yellow flowers.

MONUMENT TO ERNEST CALVAT.—To mark their appreciation of the valuable services rendered to horticulture by the late ERNEST CALVAT, it has been decided by the French National Chrysanthemum Society to raise funds for the erection of a monument to his memory. We understand that donations may be sent to Mr. HARMAN PAYNE, 141, Wellmeadow Road, Catford, S.E.

FATAL ACCIDENT TO A GARDENER.—GEORGE CORMACK, 56 years of age, in the employment of Messrs. WILLIAM SMITH & SONS, Nurserymen, Burnside Nursery, Aberdeen, died in the Aberdeen Royal Infirmary on the 7th inst., under somewhat peculiar circumstances. About a fortnight ago, it appears, CORMACK was engaged among some trees, one of which, when he was pulling it out of the ground, suddenly yielded, causing him to fall back, and to come into contact with the root of another uprooted tree. CORMACK appeared to be somewhat seriously injured, and was taken home. He afterwards resumed work for a day or two. Subsequently, however, he again seemed to suffer from the effects of his injuries, and he was again removed to the Royal Infirmary, where he died. Lockjaw is said to have been the ultimate cause of death. CORMACK was for 34 years in the employment of Messrs. BEN. REID & Co., Nurserymen, Aberdeen, and latterly for three years with Messrs. SMITH & SONS.

ROSES AT BAGATELLE.—The third international gathering of Rose growers at Bagatelle, near Paris, took place last month. The jury comprised many well-known men in the Rose world, including Messrs. E. G. HILL, of Richmond, Ind., U.S.A.; PETER LAMBERT, of Treves; SOTPERT, of Luxembourg; A. W. PAUL, of

Cheshunt; DICKSON, of Newtownards, Ireland; PERNET-DUCHER, LEVÊQUE, BARBIER, ABEL CHATENAY, GRAVEREAUX, and MAURICE DE VILMORIN. Although some good varieties were shown, the jury were unable to make any award of the City of Paris Gold Medal. Sixty-nine novelties were shown, and four of these were certificated, viz., Molly Sharman Crawford (DICKSON), Mdle. Marie Mascuraud (BERNAIX), Lady Alice Stanley (MACGREY), Commandeur Jules Graveraux (CROIBIER). A representative from the Ministry of Agriculture presented to Mr. PETER LAMBERT and Mr. E. G. HILL the diploma of Knight of the Mérite Agricole. The lady patroness of the Rose Society awarded their Gold Medal to the varieties Georges Cain (GRAVEREAUX), Mrs. Alfred Tate (MACGREY), and Entente Cordiale (GUILLLOT). A little book, *Bagatelle et ses Jardins*, has recently been published by the Librairie Horticole, Paris. It contains 120 pages and a number of illustrations.

ROSE CONGRESS AT PARIS.—In the *Journal* of the National Horticultural Society of France for June there is a very full account of the International Rose Growers' Congress held in Paris last May. Apart from a verbatim report of the discussions, there is given an interesting list of synonyms. The whole account of the congress occupies about 40 pages.

DEVELOPMENT AND ROAD IMPROVEMENT FUNDS ACT, 1909.—The following resolutions of the Council of the Royal English Arboricultural Society have been forwarded to the Development Commissioners:—The Council is of opinion that Section I paragraph b (1), viz., "the conducting of inquiries, experiments, and research for the purpose of promoting forestry and the teaching of methods of afforestation," should be carried into effect as soon as possible, and that Section 1, paragraph b (2), viz., "the purchase and planting of land found after inquiry to be suitable for afforestation," should be postponed until after the result of such inquiries and experiments have been made known to the Commissioners. They believe such experiments and research should be carried out in connection with existing institutions, such as Armstrong College, Bangor University, Cirencester College, Oxford University, and Wye College, and that no new central institute requires to be created. In order to carry on such experimental areas, not to exceed 100 acres in each case, should be established in connection with each of the above-named institutes as soon as possible. Concerning inquiries, the Council would mention that the following subjects, amongst others, urgently require continued investigation and research at the present time:—(a) The selection, testing and distribution for trial of forest tree seeds, native and exotic. (b) The hybridisation of trees with the object of producing new and improving old varieties. (c) The best means of reducing the ravages of the diseases of the Larch. (d) The economic qualities of British-grown timber upon which there is a general want of knowledge. (e) Chlorosis, or the influence of lime in the soil on trees. (f) Influence of various methods of planting forest trees and the effect of grass upon their roots. Short free courses should be held in connection with the existing centres, such courses to be duly notified to the County Technical Education Committees. The Council considers that it would be greatly to the promotion of forestry if experts were attached to the Board of Agriculture. The Council would beg to recommend that an advisory committee on forestry should be appointed as provided for in Section 4, paragraph 3, and that this Society, consisting of over 1,200 members, should be represented upon such committee by, say, three members of their Council.

BARON SCHRÖDER'S WILL.—The will of the late Baron Sir HENRY SCHRÖDER has just been proved. The gross value of the estate is £2,079,611, of which the net personalty has been sworn at £1,970,927. It has been announced already that amongst the Baron's bequests are sums of £1,000 and £500 to the Gardeners' Royal Benevolent Institution and Royal Gardeners' Orphan Fund respectively. In his directions respecting bequests to servants, Baron SCHRÖDER included the following words:—To his gardener, HENRY BALLANTINE (in addition to the bequest of £1,000), one original Orchid, to be chosen by him, and all smaller plants which have been taken from it. To his Orchid foreman-gardener one original Orchid, to be chosen by him after HENRY BALLANTINE has made his choice, and also all smaller plants which have been taken from it. In addition, a sum of £3,000 is left for distribution by Baron SCHRÖDER's executors amongst all the servants in his employ at the time of his decease.

STATICE PEREZII, STAFF.—In Moeller's *Deutsche Gärtner Zeitung*, Dr. BURCHARD refers to the decorative value of this new Statice from the Canary Isles. The plant bears an abundance of violet-blue flowers, and is more branched and not so tall as its better-known relatives, *S. arborea* and *S. macrophylla*, being only about 24 to 30 inches high. While most of the representatives of the genus grow at sea level, *S. Perezii* is found inland at an elevation of about 2,500 feet at the limit of the forest region. It may be raised from cuttings or from seed; the latter germinate readily in the shade at a temperature of 55° to 65° F. in sandy loam. After the appearance of the first two or three leaves, the seedlings should be transferred to small pots containing a rather stiffer soil. The plant likes a warm, sunny aspect, and when well managed will flower the first season out-of-doors, after which it should be wintered under cover and planted out again about the end of May.

PUBLICATIONS RECEIVED.—*The Agricultural Journal of the Cape of Good Hope*. Published monthly. June, 1910. (Cape Town: Cape Times, Ltd.) Price 6d. — *Journal of Forestry*. July, 1910. (London: Laughton & Co.) Price 2s. — *Transactions of the Royal Scottish Arboricultural Society*. Vol. XXIII. Part II. July, by Lieut.-Colonel F. Bailey. (Edinburgh: Douglas and Foulis, Castle Street.)

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

STUDENTS FOR WISLEY.—There are now but very few vacancies remaining for students wishing to commence the two years course of study at the Wisley Gardens of the Royal Horticultural Society in September next. Young fellows over the age of 16 wishing to avail themselves of the tuition and training offered by the Society should make application immediately on forms to be obtained from the Secretary of the R.H.S., Vincent Square, Westminster. An entrance fee of £5 5s. is charged, and students board and lodge at their own expense in the adjoining villages. The training given includes both a scientific and a practical knowledge of gardening, and various germane examinations are prepared for, including the Diploma of the School, given to students who show a sufficiently high standard of knowledge at the completion of the two years course. This information may be useful to youths about to leave their school. W. Wilks, Secretary.

BEGONIA MARTIANA GRANDIFLORA (see also p. 63).—The *Botanical Magazine* has just published a plate of *Begonia Martiana grandiflora*, with a very interesting note in which, however, the origin of this plant is not indicated in a precise manner. Would you allow us to relate certain circumstances connected with its origin. *Begonia racemiflora*, a species probably lost to cultivation and belonging to the same group as *B. diversifolia*, was found in the province of Colima (Mexico) by the botanist Benedict Roez, who sent

it to M. Ortgies, Director of the Botanical Garden at Zurich. It passed into the hands of M. Victor Lemoine, Nancy, who put it into commerce at the commencement of the year 1877. The flowers are of moderate size, white or with rose tint; they are developed in axillary bunches, and show themselves all on the same side. *Begonia racemiflora* was crossed with *B. diversifolia* in the establishment of M. V. Lemoine, and it produced two hybrids, which were put into commerce in 1882. These possessed larger flowers and grew 1 metre (= 3 feet 3 inches) in height. The names of the hybrids were *B. racemiflora rosea perfecta*, which had almost white flowers, and *B. racemiflora rosea grandiflora*, a rose-coloured flower. In the same year (1882) M. V. Lemoine put *Begonia Martiana gracilis* into commerce. This species was found by Dr. Parry near San Luis de Potosi (Mexico), and he sent it to M. Max Leichtlin, of Baden-Baden. It is a little bush-like plant covered with brilliant rose flowers. In crossing *B. Martiana gracilis* with *B. racemiflora rosea grandiflora*, M. V. Lemoine obtained, and put into commerce in 1884, the *B. Martiana racemiflora*, a variety of great vigour, with tall red stems and rose-coloured flowers. The following year (1885) *S. Martiana grandiflora* was put into commerce, having the same origin but distinguished by its green stems and more compact habit of growth. Some years later there appeared *Begonia Martiana pulcherrima*, produced from seed of *B. Martiana grandiflora*. These *Begonias* should be cultivated out of doors in summer in full sunshine, to which all the flowers turn. When they are cultivated in the greenhouse or in the shade they do not develop their true beauty. V. Lemoine et fils.

CHRYSANTHEMUM "A. WELHAM."—This variety obtained an Award of Merit at the Wolverhampton Show. The flowers were 3 to 4 inches in diameter, white, and as double as a fine *Victoria Aster*. So far as the flower was concerned, it appeared to be of the *C. coronarium* class, but the raiser declared he had raised it from tricolor, and the appearance of the foliage bore out the statement. It must have taken many years' work to get such a flower developed from *C. tricolor*. It does not seed in the Midlands, but it roots freely from cuttings, and the plants bloom from April till October. W.

GERMINATION OF UNRIPE SEED (see p. 19).—As between ripe and unripe Tomato seed, certainly all experience is in favour of the latter if sown green, i.e., without keeping. It is a fact that on the rubbish heaps before we can burn them, thousands of seedlings are seen in autumn. Again, if any green fruit is knocked off and trodden upon, seedlings soon appear. Now, as to the merit of unripe seeds for market growing; seedlings from them always produce an abundance of growth, but the fruit set with great difficulty. New Cucumber and Melon seed are much quicker in germination than old, but we growers prefer the ripe seed. I have not kept unripe seed for experimenting; perhaps some readers have done so. Stephen Castle, Walpole Marsh, Wisbech.

STYRAX JAPONICA.—The cold, wet summer of 1909, followed by early frost and a trying winter, was not favourable to a profusion of blossom this season on shrubs flowering on the old wood. There is the greater reason, therefore, to note the exceptions, among which none is more remarkable here than *Styrax japonica*, which displays at present (July 18) a shower of white, waxy bells, agreeably scented. I obtained a single plant from Newry four years ago; it is now 8 feet high, and has proved perfectly frost-proof in the open border without the slightest protection. Herbert Maxwell, Monreith.

PANSIES AND VIOLAS.—I was pleased to see Mr. Brennan's note on p. 36 respecting *Viola Kitty Bell*. On taking over the charge of these gardens last August, I found one plant growing in the herbaceous border. In the second week in September cuttings were taken from it, and these were rooted in boxes in a cold frame, where they remained until March. They were then hardened gradually, and afterwards planted out on an east border. The blooms were kept picked off, and the first week in June the plants were transferred to two large flower-beds

as a groundwork between dot-plants of the pink Ivy-leaved *Pelargonium Mme. Crousse*. Small plants of the variegated Grass *Dactylis variegata* were planted between the *Violas* sparingly. The whole is now a very pretty and effective combination. Of the free-flowering properties of this *Viola* there can be no question, and the colour is one that appeals to many. I agree with Mr. Brennan when he advises a sunny, open aspect, and I would add that in dry weather the plants must be well watered. Dead and faded blooms should be picked off at frequent intervals. R. W. Thatcher, The Gardens, Wistow Hall, Leicester.

CABBAGE TRIALS (see p. 38).—When Ellam's Early Cabbage was introduced, it quickly obtained favour for its earliness, non-bolting qualities and for its general excellence; it has retained its hold upon those who appreciate an early and good Cabbage. I fail to see what advantage there is in sowing on a particular date a number of stocks of so-called improvements upon the original variety because those who grow Cabbages select their dates for sowing according to locality and requirements. A true stock of Ellam's Cabbage is to-day just what it was when introduced, and the loading of lists with so-called improvements upon the original is a useless proceeding. A reduction of names would be much more to the point. E. M.

QUERCUS ILEX.—The Supplementary Illustration and note respecting the *Quercus ilex* at Wilton House induced me to measure a fine old tree of the same kind growing in the gardens here. The length of the trunk from the ground to the branches is about 7 feet, and it varies in circumference from 16 feet to 21 feet. The largest branch is 53 feet long and 8 feet 8 inches around its thickest part. The farthest across the tree, from tip to tip of the branches, is 98 feet. The lower branches spread out uniformly and almost horizontally, which gives the tree a well-balanced appearance. The circumference of the branches is 294 feet, so that, at a rough calculation, the tree covers about 8,100 square feet of ground. There is no authentic date as to the planting of this tree, but its size gives some idea of its great age. The lower branches are supported by wire ropes secured to the more upright branches. These supports are invisible to anyone standing a little distance from the tree, but this method entails careful annual examination to prevent the wires from cutting into the bark, although it is protected by thick leather bands under the ties. Chas. Straughen, Ynys-y-Maengwyn Gardens, Towy, N. Wales.

SWEET WILLIAM PINK.—Mr. Murison's description of his plant (see p. 19) is similar to that of the Double Dwarf Sweet William of Scottish gardens. Fairchild's Mule was not a "Sweet John," though, from the description, it partook of the habit of that section of Sweet William. It is, perhaps, not generally known that there is a very large number of Mule Pinks, and, so far as I could describe them, they are described in *The Book of the Carnation*. I would like to see a truss of the flower in question. Your correspondent might also send a specimen to Mr. Forbes, Buccleuch Nurseries, Hawick, who possesses a large collection of Mule Pinks. No one can say if Fairchild's Mule is still in existence. In one book a little later than his day, it is stated that there were many in cultivation. R. P. Brotherston, Tynninghame, N.B.

LEONARDSLEE.—The Rambler Roses on the trunks of living trees (see p. 35) are now in full bloom, the display being excellent this season. *Romneya Coulteri* is also very beautiful just now. Amongst other interesting plants in flower are *Mitrasia coccinea* and *Desfontainia spinosa*. Contrary to general opinion, the *Desfontainias* are growing in a position where they are exposed to full sunshine. W. A. C. July 18.

ADVENTITIOUS OR AIR-ROOTS ON VINES.—In some excellent vineries recently, I noticed in several cases adventitious roots hanging from the vine rods. I had not seen them in previous years. Turning to the late A. F. Barron's work on the vine, I find he writes that air roots, when present in large numbers, indicate want of proper action on the part of the true roots. Also that the air roots are a sign

of bad health, and that they may prove to be the forerunners of shanking. He further states that, for some reason, the proper roots are unable to supply the foliage with its needful sap, and, because the atmosphere of the vinery is close and moist, nature is, through these air-roots, seeking to supply the deficiency. In the case I refer to, the borders were in a sour condition, or the roots had got out of the surface soil into the subsoil, or the border may be so deep that it is badly aerated. The proper course to take is to lift the vine roots next winter and remake the borders, adding a good quantity of wood ashes, old mortar refuse, and finely-crushed bones, to make a sweet root medium. *D.*

SOCIETIES.

ROYAL HORTICULTURAL.

JULY 19.—The usual fortnightly meeting took place on Tuesday last in the Society's Hall, Vincent Square, Westminster.

The ORCHID COMMITTEE granted two First-class Certificates, three Awards of Merit, two Botanical Certificates, and two Cultural Commendations.

The principal exhibits before the FLORAL COMMITTEE were groups of Sweet Peas, Carnations, Roses, Begonias, and hardy flowers. The FLORAL COMMITTEE conferred no fewer than 14 Awards of Merit, two of these going to hybrid Astilbes, shown by Mr. Arends, Ronsdorf, Germany.

In the Fruit and Vegetable Section no award was made to a novelty, but a group of pot fruit trees exhibited by Messrs. James Veitch & Sons was probably the finest display in the show; besides gaining a Gold Medal, the highest award of the Society, the Committee recorded in the minutes an appreciation of the excellent culture shown in this collection. At the 3 o'clock meeting in the Lecture Room, a lecture on "Insects Affecting Crops" was given by Mr. Fred Enock.

Floral Committee.

Present: W. Marshall, Esq. (Chairman), and Messrs. H. B. May, C. T. Druery, E. A. Bowles, R. C. Notcutt, Jno. Green, T. W. Turner, Geo. Gordon, J. F. McLeod, R. Hooper Pearson, W. Howe, C. Blick, H. J. Cutbush, A. Turner, H. J. Jones, C. E. Shea, Chas. E. Pearson, W. Cuthbertson, Jas. Douglas, Jas. Walker, W. B. Cranfield, George Paul, and Edward Mawley.

Messrs. W. PAUL & SON, Waltham Cross, filled an entire table with Roses, including Ramblers. The large blooms included the fine H.T. variety Earl of Warwick, Celia, Dean Hole, Richmond, Hugh Dickson, Antoine Rivoire, Lady Ashtown, Mme. Jules Grolez, Joseph Hill, Prince de Bulgarie, Mildred Grant, Frau K. Druschki and Princess Marie Mertschersky. (Silver Flora Medal.)

Messrs. STUART LOW & CO., Bush Hill Park, Enfield, showed Roses in considerable numbers, among which were observed fine blooms of Mme. Ravary, His Majesty, Liberty, David McKee, Lady Alice Stanley, Betty, Mrs. W. J. Grant, Lyon Rose, and White Killarney.

Messrs. B. R. CANT & SONS, Colchester, made a show of cut Roses in vases. We noted the new H.T. Elizabeth, a seedling which had Frau Karl Druschki as one of its parents, and possesses the habit of that variety with its freedom of flowering; H.T. St. Helena, H.T. Lady de Bathe, a creamy yellow Rose with a pink tinge, globular and full; Betty, G. C. Wand, Mrs. T. Rosevelt, Grand Duc de Luxembourg, Pharisæer, St. Helena and Colcesteria. (Silver Flora Medal.)

H. D. BROUGHTON, Esq., Beech Hurst, Andover (gr. Mr. Gregory), showed a boxful of H.T. Roses, some of them being of excellent merit.

Messrs. J. VEITCH & SONS, Chelsea, had a considerable exhibit of border varieties of the Carnation, shown as grown in 5-inch pots.

Mr. A. F. DUTTON, Iver, Bucks., had a long table to himself for a display of Carnations of all classes. The varieties Roy Dutton (deep cerise), Lemberg (a purple-edged Picotee), Iver Clove (well formed, very dark crimson), Best Newman (a crimson flake), Iver Purple, and

Arthur Dutton (a perfectly-formed flower) were noticed. (Silver Banksian Medal.)

Messrs. H. CANNELL & SONS, Swanley, showed tuberous-rooted Begonias, with double flowers. Especially pleasing were Mrs. W. Marlow, Rosebud, Surprise, Orange King, Countess of Portsmouth, Sparkler, Sunflower, Blush Queen, and Avalanche. (Silver Flora Medal.)

Messrs. DOBBIE & CO., Edinburgh, staged a very handsome exhibit of Sweet Peas, which had been introduced or raised by the firm. The general arrangement was that of pyramids of flowers about 4 feet high, the same variety being extended to the front of the staging in vases, thus making an imposing display. Princess Victoria (pink), Mrs. A. Ireland (pink and white), Edrom Beauty (orange-scarlet), Masterpiece (blue), and Sunproof (crimson) were noted as being especially fine. (Silver-gilt Flora Medal.)

Mr. J. DOUGLAS, Great Bookham, showed about two dozen vases filled with as many varieties of border Carnations, receiving a Silver Flora Medal. The varieties Hercules (dark crimson), Mrs. Trelawney (pinkish-orange in colour), Elizabeth Shiffner (deep fawn), Mrs. Robt. Gordon (of the old rose colour), Agnes Sorrel (very dark crimson), King of Spain (two tints of crimson), and Magnificent (of a soft shade of pink), are a selection of the finer varieties. (Silver Flora Medal.)

Mr. CHAS. TURNER, Royal Nurseries, Slough, showed border varieties of Carnations, viz., The Pearl, a pure white flower; John Pope, a perfect bloom of the "old rose" colour; Ethel, a soft canary-yellow flower; Sylvia, a wire, red-edged Picotee; and Sunset, a deep cerise variety, with a yellow tinge.

SIR DANIEL GOOCH, Bart, Hylands, Chelmsford (gr. Mr. Wilkinson), made a great display with Carnations at one end of the Hall, almost the entire space being occupied by his exhibit. There were remarked Carnation Souvenir de la Malmaison Duchess of Westminster, Princess of Wales, Sir E. Hambro', and H. J. Jones. These flowers were shown in great abundance in vases and bamboo flower-holders. Border varieties were arranged in the front lines, with perpetual-flowering varieties, and we noted Harloweuden, Britannia, Lady Whitford, Lancet, Aurora, and The Mikado. (Silver-gilt Flora Medal.)

HARDY PLANTS AND ALPINES.

Messrs. WM. CUTBUSH & SONS, Highgate, brought a fine collection of garden flowers, amongst which hardy Water Lilies, Spiræas, Gaillardias, many good and showy Campanulas, Lilium Henryi, L. pardalinum, and others were noticeable. Erica coccinea and E. cinerea alba were displayed in fine masses, and provided welcome touches of colour in the large, well-arranged group. The pretty Anemonea cruenta, with dainty sprays of scarlet blossoms, was very fine. (Silver Banksian Medal.)

Messrs. BARR & SONS, Cvent Garden, London, had a showy exhibit of seasonable hardy flowers, a big feature being made of Salvia virgata nemorosa, with dark-chocolate-coloured spikes of flowers. Other choice subjects were Lilium testaceum, L. chalcidonicum Heldreichii, L. Brownii, Phloxes, and Physostegia virginica alba.

Misses HOPKINS, Shepperton-on-Thames, showed an interesting group of Alpines and hardy flowers, amongst them being the pretty Campanula Waldsteniana, Potentilla Tonguei, and Omphalodes Luciliae, the last-named with pale, opalescent, blue flowers.

M. GEORG ARENDS, Ronsdorf, Germany, had a fine set of hybrid Astilbes, of which Rosa Perle, Cream Pearl, Ceres (rosy-lilac), Salmon Queen, and Venus (deep rose) were the choicer varieties.

Messrs. G. BUNYARD & CO., LTD., Maidstone, had a showy and extensive group of herbaceous flowers. Phloxes, Larkspurs, perennial Marguerites, Pentstemons, white perennial Pea, Iris Kammeri (lavigata) in variety, Dianthus Napoleon III., and Centaurea macrocephala were the chief subjects. (Silver Banksian Medal.)

Mr. M. PRICHARD, Christchurch, Hants., showed Scabiosa caucasica, Aster mesa grande (a very dark-flowered kind, with thread-like ray florets), Gaillardias, Astilbe Thunbergii, Campanula Riverley, and Centaurea ruthenica. Phloxes also were good, and many interesting

Alpines were displayed. (Silver Banksian Medal.)

Mr. CLARENCE ELLIOTT, Stevenage, Herts., arranged a small rockery exhibit, Campanula punila in variety, with Androsaces, Tunga Saxifraga fl. pl., and Wahlenbergia saxicola being displayed to advantage.

Mr. FRANK LILLEY, Guernsey, had a showy group of the early-flowering Gladioli, of which Ne Plus Ultra, cardinalis elegans, formosissimus, and General Scott were among the more striking sorts in a large and comprehensive gathering. Sparaxis plucherrima in this group was very beautiful. (Silver Banksian Medal.)

Mr. AMOS PERRY, Enfield, made a very fine feature of waterside plants, moisture-loving Lilacs and hardy Nymphaeas, Spiræas, and Astilbes being remarkably well shown. Of the Spiræas, S. venusta gigantea, with rosy-crimson flower-heads, is a particularly fine plant. S. aruncus and S. gigantea (syn. Kamshatica), with white flowers, were also very effective. Many seedlings of merit, too, were shown, and we also noted several varieties of Astilbe Arendsii and A. chinensis. Lilies, such as L. pardalinum, L. superbum, L. Grayi, L. Parryi (rich, clear yellow), and L. Krameri were remarked, while Funkias and hardy Ferns, the latter acting as a margin to the Water Lily pool, were appropriately arranged. (Silver-gilt Banksian Medal.)

THE GUILDFORD HARDY PLANT NURSERY staged Potentillas, Physostegia virginica alba, hardy Crinums, Lychis chalcidonica, Heleniums, and other plants.

Mr. G. REUTHE, Keston, Kent, had an interesting exhibit, displaying, apart from a seasonable assortment of herbaceous subjects, varieties of Alpine Campanulas, of which C. Stansfieldii, C. pulloides, C. Waldsteniana, C. garganica, C. Rameri and others were remarked. Phyllyrea buxifolia and Plagianthus Lyallii were notable, too, among choice flowering shrubs. (Silver Banksian Medal.)

Messrs. GUNN & SONS, Olton, Birmingham, staged a particularly fine lot of herbaceous Phloxes, of which Kompan pinki, Dr. Charcot (blue), Ellen Willmott (blue), Tapis Blanc, and F. Von Lassberg were the more conspicuous. Messrs. GUNN also showed baskets of Viola cornuta, V. atropurpurea, and others. (Silver Banksian Medal.)

Messrs. T. S. WARE, LTD., Feltham, had an extensive bank of herbaceous flowers, showing Crinums, Phloxes, Platycodon autumnale, P. a. alba, many good Campanulas, Gaillardias, Eryngiums, and other seasonable subjects in great variety. (Silver Banksian Medal.)

Messrs. WM. WELLS & CO., Merstham, effectively staged Phloxes, Violas, Pentstemons, Lupins, and similar garden plants in some quantity.

Messrs. R. W. WALLACE & CO., Colchester, occupied a corner of the hall with Lilies, Kniphofias, and Poppies on a stage, at raising at the ground level a really delightful bit of waterside gardening, in which Spiræas and Astilbes, Funkias, and a fine lot of Iris laevigata were seen to advantage. (Silver-gilt Banksian Medal.)

Messrs. CARTER, PAGE & CO., London Wall, E.C., arranged, in pans, a most comprehensive collection of Violas in the leading commercial sorts, the beauty and freshness of the flowers gaining much admiration from visitors. (Silver Banksian Medal.)

MISCELLANEOUS EXHIBITS.

Messrs. J. VEITCH & SONS, Chelsea, showed their Auricula-eyed Sweet Williams, a strain in which the flowers are marked with crimson on a white ground. The individual flowers are remarkable for their large size and symmetrical shape. This firm also showed Abutilons, including Red Camulet (a brilliant flower, outside and inside), rosefflorum, Golden Fleece, and the old Boule de Neige. Fuchsias were shown in considerable numbers as standards and as bushes. We noted Mrs. Marshall, Mrs. Rundle, and Scandity among the former, and bushes of Sylvia, Brilliant, Coralie (of the corymbiflora section, in colour orange-scarlet), Phenomenal White, and Phenomenal Rose, Beauty of Exeter, and Royal Purple. Messrs. VEITCH also showed China

indica in six beautiful varieties, of which we may mention R. Wallace (yellow) and Meteor (orange red). Other subjects exhibited by this firm were *Kalanchoe flammea*, *Begonia Washington*, and a number of *Javanico-jasminiflorum* *Rhododendrons*. (Silver Flora Medal.)

Mr. HENRY DIXON, Wandsworth Common, showed early-flowering *Gladoli* plants, so useful for affording flowers for cutting.

Mr. L. R. RUSSELL, Richmond, Surrey, exhibited a group of species and varieties of *Fuchsia*. (Bronze Flora Medal.)

Messrs. H. B. MAY & SONS, The Nurseries, Upper Edmonton, showed well-grown *Codiceums*, varying from 2 to 5 feet in height and well coloured, considering the weather of the present season. This firm also displayed a group of choice exotic Ferns, the various *Nephrolepis* being very ornamental. (Silver-gilt Flora Medal.)

E. J. PRESTON, Esq., Kelsey Park, Beckenham

pollen the seedlings possessed extraordinary vigour in regard to growth, but were very shy bloomers. The varieties of *A. Arendii* seldom, or never, grow more than 4 ft. in height, whilst their habit is all that could be desired. Mr. ARENDS exhibited a group of plants representing quite a number of varieties. Two of these were selected to receive Awards of Merit, namely, *Venus*, whose flowers were of deep violet-rose colour, and *Salmon Queen*, a variety with salmon-pink-coloured flowers.

Calendula (strain).—Messrs. DOBBIE showed double flowers of a grand strain of *Calendula*. The blooms were 4 inches or more in diameter, those of *Sulphur Queen* being exceedingly pale-yellow, whilst another variety exhibited a very deep orange tint. An Award of Merit was recommended for the strain.

Carnation "Robert Berkeley."—Mr. JAMES DOUGLAS showed this very distinct border Car-

Gypsophila carminea.—An annual *Gypsophila* and an exceedingly pretty plant, having a free-flowering, branching habit and single flowers nearly half an inch across, of a pale shade of carmine. From Messrs. DOBBIE & Co.

Rose multiflora "Flame."—This variety is said to grow 9 feet high. It has semi-double, rosy-crimson flowers, with whitish centre, and these are produced in fine, large trusses. Shown by Mr. CHAS. TURNER, Slough.

Senecio glastifolius var. *Hon. Vicary Gibbs*.—This is a variety of the species figured in the Supplementary Illustration published in this journal last week, but, as shown, the flowers were scarcely so attractive in colour. Shown by the Hon. VICARY GIBBS.

Sweet Pea Elfrida Pearson.—This is a very large flower of rose-pink colour. There are generally four blooms on the spike, as shown, and the large, waved flowers frequently have double standards. Shown by Messrs. PEARSON & SONS, Lowdham.

Sweet Pea "Iris."—A very fine variety with large flowers, a good standard with waved outline, and pleasing tint, being an uncommon shade of salmon-pink; a slight cream shade proceeds mainly from the keel. Shown by Mr. THOS. BREADMORE.

Sweet Pea "Earl Spencer."—This variety is now pretty well known for its bright orange-coloured flowers. Excellent specimens were shown by Messrs. DOBBIE & Co.

Sweet Pea "Marian Cuthbertson."—This is a very beautiful pink variety. Shown by Messrs. DOBBIE & Co.

Sweet Pea "Mrs. F. A. Wellesley."—This variety was shown exceedingly strong, having long, very thick stems. The blooms have magnificent standards, and the variety will probably be much esteemed among the white sorts. Shown by F. H. WELLESLEY, Esq.

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the Chair), and Messrs. Jas. O'Brien (hon. Sec.), de B. Crawshay, Harry J. Veitch, R. Brooman-White, H. Little, R. G. Thwaites, F. J. Hanbury, J. Charlesworth, W. H. Hatcher, H. G. Alexander, A. Dye, W. H. White, H. A. Tracy, Gurney Wilson, Clive Cookson, C. J. Lucas, and Sir Jeremiah Colman, Bart.

Messrs. SANDER & SONS, St. Albans, were awarded a Silver Flora Medal for a very fine group, in which both species and hybrids were well represented, the most remarkable in the former class being their new *Oncidium Sanderæ*, a new member of the small section including *O. Papilio*, and with very distinct botanical features. (See Awards.) The group, which contained excellent hybrid *Odontoglossums*, *Cattleyas*, *Lelio Cattleyas*, and other showy Orchids, had two very fine examples of *Cattleya Rex*, with 10 flowers each. There were also *Notylia Barkeri*, *Cirrhopetalum Roxburghii*, the pretty little *Orchis monophylla*; *Cattleya Gaskelliana* Snowflake, with 12 white flowers; *Eria densiflora*; *Pescatorea Lehmannii*; a few select forms of *Dendrobium Phalenopsis*, *Brasso-Cattleya Pluto*, and other *Brasso-Cattleyas*, the cross between *B. Digbyana* and *Cattleya bicolor Grossii* being distinct.

Messrs. STUART LOW & Co., Bush Hill Park, Enfield, were awarded a Silver Flora Medal for a group, the centre of attraction in which was the unique *Cattleya O'Brieniana alba*, which secured a First-class Certificate. (See Awards.) The back of the group was composed of various species of *Oncidium*, *Celogyne Dayana*, *Epidendrums*, &c. In the body of the group, *Cattleya Gaskelliana*, including the clear white form, *C. Warscewiczii*, a few *C. maxima*, *C. Forbesii*, *C. Lueddmanniana striata*, and other *Cattleyas* were effective. Among others noted were a selection of *Masdevallias*, including *M. trochilus*, *M. muscosa*, *M. calura* and *M. infracta*.

Messrs. CHARLESWORTH & Co., Haywards Heath, staged a group, in which the *Cycnoches* were well represented, several of the plants having both male and female flowers. *C. maculatum* had a spike of nine of the ordinary male flowers, the basal one being apparently intermediate between the male and female forms, and larger than the others. Other plants showed the male and female blooms on separate plants.



FIG. 26.—HYBRID TEA ROSE "FREDA," EXHIBITED BY MESSRS. PAUL AND SON, CHESHUNT : COLOUR, ROSE WITH VIOLET SHADE.

(Award of Merit, R.H.S., June 21.)

(gr. Mr. W. M. Webster), showed fine specimens of *Statice profusa*; *Kentia Belmoreana*, 10 feet by 12 feet; *Pteris Childsii*, 5 feet; and *Davallia dissecta elegans*, 2½ by 3 feet; a fine tall plant of *Dracena Victoria*, and one of *Clerodendron Balfouriana* splendidly flowered and 10 feet high. (Silver-gilt Banksian Medal.)

AWARDS OF MERIT.

were recommended in the following cases:—

Astilbe Arendii.—This name has been given to a race of hardy *Astilbes* (*Spiræas*) raised by Mr. ARENDS, Ronsdorf, Germany, from crosses between *A. Davidii* and *A. Queen Alexandra*, *A. floribunda*, and others. In every case *A. Davidii* was the pollen parent, for it was found that when this species was crossed with other

nation. The flowers are a "Malmaison" shade of pink, and the petals are very smooth. It is a variety of much refinement.

Cosmos "Rose Queen."—This variety produces a great number of single flowers, which measure 3 inches or more in diameter; they are a most pleasing shade of mauve, with yellow centre. Shown by Messrs. DOBBIE & Co.

Fuchsia Sylvia.—This variety belongs to the same type as the old favourite known as "Miss Lucy Finnis." It has large, double flowers, with inflated, white corolla and brilliant red sepals. *Fuchsias* have been under a cloud in recent years, and very few awards have been made to them. It is said that this most effective variety is what is termed a good doer. From Messrs. JAS. VEITCH & SONS, LTD.

Two *Dendrobium Sanderæ*, a fine plant of *Chysis lavis*, *Lælia monophylla*, and other rare species, including *Pescatorea lamellosa*, which secured an Award of Merit, are also shown.

Sir JEREMIAH COLMAN, Bart., V.M.H., Gatton Park (gr. Mr. Collier), staged a group in which the central figure was a grand plant of *Cattleya Rex*, with seven flowers on a spike. (See Awards.) Other specially noteworthy specimens were the rare *Javan Dendrobium arcuatum*, producing many short racemes of pretty, white, long-spurred flowers from the old pseudo-bulbs; *Acrostichilus Thompsonii*, with a fine head of white and purple blooms; the new *Odontoglossum Queen of Gatton* (triumphans aureum \times perculum), a model flower, with pale-yellow ground colour, heavily blotched with dark purple; two fine scarlet *Odontodia Bradshawæ*; *Dendrobium Arthur Ashworth*; *Platyclinis filiformis*; *Aeranthus grandiflorus*; *Pleurothallis stenophylla*; and *Xylobium leontoglossum*. In front of the group were cut flowers of varieties of *Sobralia Colmanii* of various shades of pale yellow.

Sir TREVOR LAWRENCE, Bart., K.C.V.O., Burford (gr. Mr. W. H. White), showed a fine plant of the singular *Masdevallia deorsa*, with eight yellowish flowers, spotted with dark purple; a well-flowered plant of *Calanthe japonica purpurea*; *Brasso-Cattleya Joan* (*B. nodosa grandiflora* \times *C. Warszewiczii*), with pretty, white flowers, the labellum and backs of the sepals spotted with rose-purple; and others. (See Awards.)

Messrs. J. & A. A. McBEAN, Cooksbridge, showed a fine plant of *Odontoglossum ardentissimum* Doris, with three-branched spike of white flowers heavily blotched with claret-purple.

R. G. THWAITES, Esq., Chessington, Christchurch Road, Streatham Hill (gr. Mr. Black), sent four plants of his very pretty *Odontodia Thwaitesii* (*O. Harryanum* \times *C. Vulcanica*), which is one of the most distinct in colour of all the *Odontodias*, its various shades of rose-purple and lilac being very attractively arranged.

DE B. CRAWSHAY, Esq., Rosefield, Sevenoaks (gr. Mr. Stables), showed *Odontodia Seuenaeca* (*C. Noezliana* \times *O. Hunnewellianum*), an interesting cross, in which the influence of the firm texture and unfimbriated lip of *C. Noezliana* has succeeded in obliterating the very pronounced undulation and fimbriation in the lip of *O. Hunnewellianum*, the result in the progeny being an approach to some of the forms of *O. Bradshawæ*. The pretty and well-formed flowers have a yellowish ground colour marked with orange-red over the greater part of their surface. The name is the old Saxon one for Sevenoaks, the place it was raised at.

A. HARRISON, Esq., Lyndhurst, Watford, showed a small selection of *Cypripediums* and a good plant of *Epidendrum falcatum* (*Parkinsonianum*).

H. S. GOODSON, Esq. (gr. Mr. G. E. Day), sent two plants of *Cattleya Rex*.

FRANCIS WELLESLEY, Esq., Westfield (gr. Mr. Hopkins), showed *Cattleya Gaskelliana* Queen of the Earth, a very fine white flower with the faintest trace of colour on the lip of the older flowers.

AWARDS.

FIRST-CLASS CERTIFICATES.

Cattleya Warszewiczii Low's variety, from Lieut.-Col. Sir GEORGE L. HOLFORD, K.C.V.O., Westonbirt.—A grand, dark variety of the *C. W. Sanderæ* type, in which the large, intensely rich crimson-purple lip shows only small yellowish spots on each side of the middle portion instead of the large, light-coloured patches seen in ordinary forms. The noble specimen shown had 14 flowers.

Cattleya O'Brieniana alba, from Messrs. STUART LOW & Co., Bush Hill Park.—A pure-white albino, the only colour in its broad-petalled, finely-formed flower being a slight sulphur-yellow tinge on the lip in front of the column. A white form of this pretty Orchid, which is commonly supposed to be a natural hybrid between *C. Loddigesii* and *C. Walkeriana*, but which has been imported in quantity in the typical rose-tinted form, comes as a surprise.

AWARDS OF MERIT.

Cattleya Artemis (*Iris* \times *Gaskelliana*), from Lieut.-Col. Sir GEORGE L. HOLFORD, K.C.V.O.—A very pretty hybrid of good size and fine substance. The sepals and petals are pink, the broad front of the lip purplish-crimson, with a

narrow, lavender-coloured margin, the central portion being orange colour fading to cream, white and extended to the side lobes.

Oncidium Sanderæ, from Messrs. SANDER & SONS, St. Albans.—Of the *O. Papilio* section, but with well-marked features. The scapes are near to typical *O. Papilio* and without the raised rings at the joints as seen in *O. Kramerianum*, which, however, it more nearly resembles in the flower, but is distinguished from both by the long beard-like glands on each side of the column. The dorsal sepal and petals are linear and erect, purplish at first, changing to sepia-brown; the broad lateral sepals are sharply decurved, light buttercup-yellow, with reddish markings, column velvety-purple above. Lip crimped and fringed, light yellow, with reddish markings inside the margin and on the side lobes.

Pescatorea lamellosa, from Messrs. CHARLES-WORTH & Co., Haywards Heath.—One of the finest of the *Pescatorea* section of *Zygopetalum*, and a very rare species. The flowers are nearest to *P. cerina*, and of the same yellowish-cream tint, but are easily distinguished by the thick, broad, ridged crest of the lip, which is striped with dark purple.

BOTANICAL CERTIFICATE.

Bulbophyllum Rhizophoræ, from Sir TREVOR LAWRENCE, Bart., K.C.V.O.—A dwarf species from tropical Africa, of tufted growth and bearing drooping sprays of singular brown and yellow flowers.

Liparis rhodochila, from Sir TREVOR LAWRENCE.—A very pretty little species, with erect spikes of smallish pale-green flowers, having prominent orange-red labellums.

CULTURAL COMMENDATION.

To Mr. H. G. Alexander (Orchid grower to Lieut.-Col. Sir GEORGE L. HOLFORD, K.C.V.O.) for two magnificent plants of *Miltonia vexillaria* Queen Alexandra, the one with seven spikes with 36 flowers; the other 6 spikes with 29 flowers, the labellums being over 4 inches across.

To Mr. W. H. White (Orchid grower to Sir TREVOR LAWRENCE, Bart., K.C.V.O.) for a very fine plant of *Cypripedium W. R. Lee* "Burford variety," with four strong spikes bearing, together, 11 flowers.

Fruit and Vegetable Committee.

Present:—G. Bunyard, Esq. (Chairman); and Messrs. J. Cheal, W. Bates, J. Davis, J. Perkins, E. Beckett, W. Pope, G. Hobday, A. R. Allan, J. Vert, J. Jacques, G. Wythes, W. Poupart, and C. G. A. Nix.

Messrs. J. VEITCH & SONS, Chelsea, exhibited a magnificent collection of orchard-house trees in pots. There were well-fruited specimens of Peaches, Nectarines, Plums, Figs, and other subjects in various stages of development. Peach Peregrine was in most instances carrying ripe fruits; Nectarines were also nearly ripe in the case of the Pitmaston Orange, Early Rivers, and Cardinal varieties; the Figs were Castle Kennedy, Bourjassotte Grise, White Marseilles and Brown Turkey, the trees being laden with ripe fruits. This exhibit was one of the best of its kind we have seen.

Messrs. J. VEITCH & SONS also exhibited superior vegetables and salads, roots, &c. The samples of Quite Content, Prestige, Prodigy, Duke of Albany, and Maincrop Peas were excellent. The Cabbage Lettuces Green Globe Artichokes, Turnips, Broad Beans, Chelsea Imperial Cos Lettuce, Supreme Kidney Potato, Ellam's Early Cabbage and Pearl Cauliflower were all good samples. A Silver-gilt Knightian Medal was awarded for the vegetables and a Gold Medal for the fruit trees.

Messrs. G. BUNYARD & Co., Maidstone, showed a collection of Peaches, Plums, Nectarines, and Foster's Seedling Grape. The Peaches were Early York, Peregrine, and Earliest of All; the Plums Early Normandy and Early Orleans; the Nectarine was Cardinal. The fruit was mostly ripe and fit for consumption. (Silver-gilt Knightian Medal.)

THE CHURCH ARMY CITY GARDENS, a body which is offering help to the unemployed in London, showed vegetables cultivated on waste land in Westminster, quite close to the Hall. The produce included good Cabbages, Turnips, Carrots, Broad Beans, and one dish of Kidney Potatoes. (Bronze Banksian Medal.)

NATIONAL SWEET PEA.

THE TRIALS AT SUTTON.

THE most valuable work carried on by the National Sweet Pea Society is its trials, which are held at the Times Experimental Station, near Guildford, under the superintendence of Mr. Charles Foster. At the close of each year a circular is sent to every member of the Society, asking that varieties for trial be sent to Mr. Foster and a duplicate list sent to the secretary. Fifteen to twenty seeds of each variety are required. Each variety, on arrival, is given a number, and the name, not only of variety, but of the sender, is kept a secret until after the inspection has been made by the Floral Committee of the Society and their awards made.

The seeds, shortly after their arrival at the Experimental Station, are sown in pots and grown first under glass to note the germination. In March or April they are planted out in the ordinary way in short rows, one variety in a row, a stamped metal number being attached to the end of each row. The Floral Committee visited the trials and made their inspections during the first week of July. On the 14th inst. one hundred or so members of the Society visited the trials and were entertained to luncheon and tea by Lord Northcliffe, on whose estate the Times Experimental Station is situated. In his lordship's absence, Mr. Charles Foster presided, supported by Mr. N. N. Sherwood, the president of the Society for the current year. The company also enjoyed the opportunity of seeing the charming private gardens of Sutton Place, in which Lord and Lady Northcliffe take exceeding interest. Everyone was delighted, and Mr. J. Goatley, the head gardener, deserves praise for the way in which the gardens are maintained.

Altogether, there are 312 trial rows of Sweet Peas on the ground this season. About 200 of these are novelty trials, the rest being purity and comparative trials. The Floral Committee only granted one First-class Certificate and four Awards of Merit. The varieties were as follows:—

Stirling Stent (First-class Certificate and Silver Medal).—A most richly coloured flower of orange shade deeper than Earl Spencer. (From Mr. H. Agate, Havant.)

Mrs. Hugh Dickson (Award of Merit).—A fine, cream-pink flower with an excellent, free-blooming habit. (From Messrs. Dobbie & Co., Edinburgh.)

Masterpiece (Award of Merit).—This was raised by Mr. A. Malcolm, Duns, but has passed into Messrs. Dobbie & Co.'s hands. It is a first-rate lavender-shaded variety of fixed character.

Arthur Green (Award of Merit).—A purplish-maroon variety. It is distinct from all others, but the colour will not appeal to everybody. (From Messrs. Dobbie & Co.)

Cherry Ripe (Award of Merit).—As its name indicates, this flower is a bright cherry-red. A distinct and most attractive colour. (From Messrs. Gilbert & Son, Dyke, Lincs.)

VARIETIES NOT CERTIFIED.

So much for the certificated varieties. There are always numbers of new sorts which come quite close to certification standard, but fail to get it, chiefly for the reason of there being a lack of fixity in the stocks. To far-seeing men these sorts are often more interesting than those that win, because they possess great possibilities. Some of the following good things will show what is meant:—

Wavoe Castle (Gerhold) is a fine flower, which might be described as a Dark Marquis.

Seedling Heliotrope (Dobbie).—True and distinct.

Heliotrope Self (Sydenham).—Might also be described as a dark Marquis or Tennant Spencer.

Rosy Pink (E. W. King).—Standards and wings broadly flushed with rose-pink.

Marjory Linzee (Breadmore).—Very fine; an improved Beatrice Spencer.

George Stark (Stark).—The Silver Medal Starlet Spencer of two years ago. The best stock is very fine.

Red Star (Malcolm).—This is a fine red, but resembles George Stark.

Dazzler (Breadmore).—Bright orange-scarlet.

Edna Unwin (Unwin).—Bright and distinct, seems to be nearly a bicolor.

Helen Grosvenor (Aldersey).—Very fine, resembling *Helen Lewis*, but distinct from that variety.

Marchioness of Tweeddale (Bolton).—Quite up to Award of Merit standard; white, flushed with rose.

Mrs. W. J. Unwin (Unwin).—A remarkably bright and finely striped flower; stripes are St. George colour.

Marquis type (Dobbie).—This is a fine stock. *Coccinea waved* (Hemus).

Cerise (Gilbert).

Nancy Perkin (Cantley).—A fine stock.

Dainty Spencer (Burpee).—A fine stock of *Elsie Herbert*.

Red maroon (Bolton).—A new colour.

Eric Harvey (Unwin).—Similar to *Marchioness of Tweeddale*. A fine stock.

OUTINGS AND DINNER.

The outings of the Sweet Pea Society to those who are interested in the flower are most educative and enjoyable.

The day following the outing to Guildford, the members went into the seed-growing district of Essex, and there visited the trial grounds of Messrs. Hurst and Son, where thousands of trials of Sweet and culinary Peas were seen, and where the members were most hospitably entertained by Mr. Sherwood, the principal of the firm, who happens this year to be president of the N.S.P.S.

A drive of three miles brought the party to Messrs. Dobbie's seed farm, where Sweet Peas are largely and well grown. The time here was all too short, as full opportunity was given to the party to inspect hundreds of new varieties in all stages of development.

The annual dinner took place on the evening of the first day of the show under the genial presidency of Mr. N. N. Sherwood, V.M.H., head of the wholesale seed firm of Messrs. Hurst & Son. Mr. Sherwood had on his right Mrs. Chas. H. Curtis and on his left Mrs. Horace J. Wright, and there were also present, among others, Dr. Boxall and Messrs. S. B. Dicks, W. Cuthbertson, R. Sydenham, H. Jones, H. Smith, H. J. Wright, T. Stevenson, J. Brunton, H. Shane, W. P. Wright, and C. H. Curtis. The proceedings were marked by the greatest enthusiasm.

SCOTTISH HORTICULTURAL.

JULY 5.—The monthly meeting of this society was held on this date at 5, St. Andrew Square, Edinburgh. Mr. Whytock, the president was in the chair, and there was an attendance of 90 members.

Mr. David W. Thomson, Edinburgh, read a paper on "Flower Gardening." In the first decades of the last century, said Mr. Thomson, when the flower garden had a site to itself, it generally consisted of unshapely beds cut out in the turf, and these were mostly filled with a miscellaneous assortment of shrubs and herbaceous and other plants, but now, with the improvement of existing species and the multiplication of beautiful varieties, highly artistic parterres were associated with most country seats. The work of the gardener, too, was now much more an art than it used to be, whatever might be said against the grouping together of plants of one colour, so as to form a mass, and thus make each bed a distinct picture. Blended together into one harmonious whole, this massing of individual colour in beds could lay claim to greater impressiveness than promiscuous mixing, but there were positions suitable for both systems, and there was as little reason why both should not add their distinctive charms to our gardens, as there was for playing the one off against the other. It had often been urged that the use of half-hardy plants in flower gardening involved a short-lived display, but there was abundant material for use even in winter, and many of our hardy plants, including bulbs and annuals, were among the most effective for that purpose, and were available to all. Surely it was possible to work into sub-tropical gardening a harder class of plants resembling in grace and elegance those stove and other plants now used for the purpose. On the motion of Mr. McLattie, Mr. Thomson was cordially thanked for his interesting paper.

First-class Certificates were awarded by the adjudicating committee to *Gladiolus* "Pink

Beauty," exhibited by Mr. P. Vos, Sassenheim, Haarlem; to Sweet Peas "Edrom Beauty" and Dobbie's "Sunproof Crimson," exhibited by Messrs. DOBBIE & Co., Edinburgh; and to Ox-eye Daisy "Early Meen," exhibited by Mr. F. BAILIE, Stenhouse, Liberton, Midlothian.

A Cultural Certificate was awarded to JAMES WOOD, Esq., Wallhouse, Bathgate (gr. Mr. F. Henderson), for a fine lot of *Odontoglossums* and *Cypripediums*, and to Messrs. JAMES GRIEVE & SONS, Edinburgh, for a plant of *Stanhoepa tigrina grandiflora*.

The other exhibits were: A large collection of the newer varieties of Sweet Peas from Messrs. DOBBIE & Co.; variegated *Cordylina australis* from Mr. J. D. JAMESON, Glen Tower Gardens, Hunter's Quay; *Nephrolepis Smithii* and *Cypripediums* from Messrs. JAMES GRIEVE & SONS, Edinburgh; Seedling Carnation ("Yule Tide" x "Churchwarden") from Mr. THOS. VALLANCE, Cardean Gardens, Meikle; Seedling *Antirrhinum* from Mr. D. W. THOMSON, Edinburgh; Ivy-leaved *Pelargoniums* "Countess Grey" and Red *Mme. Crousse* from Mr. JOHN DOWNIE, Edinburgh; *Hydrangea hortensis* "Avalanche" from Mr. A. PORTER, Davidson's Mains, Edinburgh; abnormal Foxgloves from Mr. ROBERTS, Dalkeith; Tomatos and Strawberries from the EDINBURGH DISTRESS COMMITTEE'S FARM, Murieston; and British Orchids from Mrs. ALGIE, Toghee House, Mayo.

Four new members were elected. The paper for the meeting on August 2 will be on "The Cultivation of Peaches and Nectarines under Glass," by Mr. THOS. McPhail, Archerfield Gardens, Dirleton.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

JUNE 23.—The meeting held on this date was the opening of the 1910-1911 session.

Col. J. RUTHERFORD, Blackburn (gr. Mr. Lupton), staged a group of plants which contained several choice Cattleyas. (Silver-gilt Medal.) *Cattleya Mendelii* var. *Duchess of York* and *Odontoglossum* x *amabile* var. "Rose Drop" received Awards of Merit.

A. WARBURTON, Esq., Haslingden (gr. Mr. Dalgleish), sent a few *Odontoglossums*, including *O. crispum* var. *Sultan of Zanzibar*, *O. c.* var. *Triumph*, *O. c.* var. *Queen of the North*.

R. ASHWORTH, Esq., Newchurch (gr. Mr. Gildden), staged a group of well-grown and showy plants. *Odontoglossum* x *Lambeauium* var. *ceruleus* was awarded a First-class Certificate, and a Silver Medal was awarded to the group.

W. THOMPSON, Esq., Stone (gr. Mr. Stevens), was awarded a Silver Medal for a group of *Odontoglossums* and *Odontiodas*. *Odontoglossum* x *eximia* var. "Centenary" and *O. crispum* var. *White Swan* received Awards of Merit.

J. MCCARTNEY, Esq., Bolton (gr. Mr. Holmes), exhibited *Cattleya Mendelii* var. *General Botha*, to which an Award of Merit was voted.

R. LE DOUX, Esq., West Derby (gr. Mr. Fletcher), exhibited *Odontioda* x *Bradshawia* "Le Doux" var. and *Cattleya Mossii* alba "Le Doux" var.

Mr. A. K. WOOD, Glossop (gr. Mr. Gould), made a fine show of plants, including *Odontoglossums*, Cattleyas in great variety, *Vanda coerulea* in fine form, and numerous other plants. A Cultural Certificate was awarded to a well-grown plant of *Odontoglossum hastilabium*, and an Award of Merit to *Phaius Sanderianus*.

Other exhibitors who were represented included Messrs. KEELING & SONS, E. V. LOW, J. BIRCHENALL, W. BOLTON, and F. SANDER & SONS.

GHENT HORTICULTURAL.

JULY 3.—At the monthly meeting of the *Chambre Syndicale des Horticulteurs Belges et Société Royale d'Agriculture et de Botanique de Gand*, held on the above date, the following awards were made to new plants:—

CERTIFICATE OF MERIT: This was awarded to *Laelio-Cattleya luminosa* *Ministre J. Renkin*, *Miltoia* St. Andre, *Cypripedium Maudiae*, and *Cypripedium Curtisii* var.—all from M. CH. DIETRICH; *Cattleya gigas* x *Cattleya Leopoldii*, from M. LE DR. BALLION; *Hydrangea hortensis* M. Emile Mouillère, shown by MM. DURIEZ FRERES; for cut flowers of *Iris Kaempferi*, exhibited by M. A. GALLET and by MM. DERVAES FRERES; and *Gladiolus Colvilei rosea*, also from M. A. GALLET.

LEEDS GARDENERS' BENEFIT.

JULY 5.—The half-yearly meeting was held on the above date. Mr. Preece presided.

The half-yearly statement was submitted, showing an expenditure of £32 5s. 5d. for sick benefits.

In eight cases members suffering from prolonged sickness had special grants made from a fund which exists for that purpose. The total income for the half-year amounted to upwards of £120.

Twelve new members have joined during the half-year.

A deputation from the Federated Friendly Societies' Council was received inviting the Leeds Gardeners' Lodge to co-operate in the movement for the betterment of parliamentary legislation towards friendly societies.

GUILDFORD AND DISTRICT GARDENERS'.

JULY 13.—The summer show of this society was held at Braboeuf Manor, Guildford, by permission of Lieut.-Col. J. A. C. Younger, on the above date. The vegetables, with the single exception of Onions, were of the finest quality; fruit was rather backward; but there was a profusion of flowers, including some magnificent Fuchsias, Carnations, and collections of Sweet Peas. There was a scarcity of Roses. In previous shows the spirit of competition had been entirely absent, there having been no judging and no distinction between the exhibits, and the committee, in deference to the wishes expressed, decided this year to award Certificates of Merit.

Lord NORTHCLIFFE, Sutton Place (gr. Mr. J. Goatley), contributed largely, including a collection of *Souvenir de la Malmaison* Carnations, a group of *Kalanchoe*, some excellent *Coleus* and *Spiraeas*, also fine displays of Ferns, Sweet Peas and vegetables; among the latter Ailsa Craig Onions were the best in the show.

Mrs. RICHARDSON, of Weylea, Guildford (gr. Mr. P. Bullen), exhibited a remarkably good collection of vegetables.

One of the best collections of flowering plants in the show was that of Mr. F. F. SMALLPEICE, J.P., of Cross Lanes, Guildford (gr. Mr. W. F. Binfield).

A very effective display of plants and an exhibit of fruit came from Messrs. A. HART & SONS, of Guildford. They also exhibited some excellent fruit.

Other trade exhibitors were Messrs. W. CUTBUSH & SON, Highgate, and Mr. A. R. UPTON, of the Guildford Hardy Plant Nursery.

ELSTREE AND BOREHAM WOOD HORTICULTURAL.

JULY 13.—The second summer show of the above society was held by permission of Lord Aldenham in Aldenham Park on this date. The weather was beautifully fine, and visitors were again granted the privilege of viewing the private grounds and gardens. The show itself was a great success, due in a great measure to the honorary exhibitors.

The Hon. VICARY GIBBS (gr. Mr. E. Beckett, V.M.H.), who is president of the society, showed a magnificent exhibit of vegetables equal to the one he recently staged at the Holland House Show. A Gold Medal was awarded.

Messrs. W. CUTBUSH & SON, Highgate, were awarded a Gold Medal for a tastefully-arranged water-garden, which occupied one end of the tent, and a collection of Roses.

Mr. ENGELMAN, Saffron Walden was awarded a Silver Medal for an exhibit of Carnations, including the new variety *Carola*.

Silver Medals were also awarded to Messrs. EASTON BROS., Barnet, for Roses; to Mr. H. H. CRANE for *Violas*; to Messrs. JARMAN & CO., Chard, for *Centaureas* and Sweet Peas; to Messrs. NEWMAN, Watford, for a display of Sweet Peas; to Messrs. JAS. CARTER & CO. for *Streptocarpus* and other flowers; and to Messrs. GLEESON & CO., Watford, for herbaceous flowers.

W. A. STEPHEN, Esq. (gr. Mr. Greenfield), was awarded a Small Silver Medal for a group of *Gloxinias*.

The joint secretaries, Messrs. F. E. Eames and W. J. Pritchard, and the committee are to be congratulated upon the success of the show.

GLOUCESTERSHIRE ROSE AND SWEET PEA.

JULY 12.—The 22nd annual exhibition of the Gloucestershire Rose and Sweet Pea Society was held at the Spa Cricket Field, Gloucester, on this date, in beautiful weather. The season has been anything but a favourable one, especially so far as Roses are concerned. There was a slight decrease in the number of entries, confined mainly to the amateurs' section.

In the nurserymen's classes for Roses, Messrs. ALEX. DICKSON & SONS, LTD., Newtonwards, Ireland, repeated their successes at previous shows this year by taking the 1st prizes in the professional classes in which they entered. Amongst their novelties was a brilliant crimson hybrid tea variety, with an almost imperceptible tinge of yellow, named "Conway Jones" out of compliment to the celebrated Rose grower of Hucclecote. Other Roses exhibited by Messrs. ALEX. DICKSON & SONS not yet in commerce were Princess Mary, a fine tea variety of apricot and yellow shades; Lady Barham, a Rose of great dimensions, and with the substance of Her Majesty, but with a high, pointed centre; and Mabel Drew, a superb Rose of pale lemon colour. Messrs. DICKSON also showed good blooms of Mrs. Foley-Hobbs, Mrs. Curtis Harrison, Lady Ursula, Lady Helen Vincent, Charles J. Graham, and Mrs. George Preston.

In the amateur classes Mr. CONWAY JONES won most of the 1st prizes and the National Rose Society's Silver Medal for the best Rose exhibited by an amateur, the variety being Dean Hole. In the division open only to amateurs in Gloucestershire Mr. CHARLES HOLBROOK, of Hucclecote, secured a Silver Medal also with the variety Dean Hole. In the class for amateurs of the city of Gloucester, Mr. A. V. WRIGHT won a similar award with White Maman Cochet.

Mr. W. JARRETT THORPE, of Hucclecote, won the piece of plate offered by Messrs. Alex. Dickson & Sons for 18 varieties single trusses; Mr. W. H. PICKFORD, Gloucester, took the City of Gloucester Corporation plate offered for the best display of Roses. Messrs. A. MORTIMER and C. L. WALKER each won pieces of plate in the cottagers' classes.

The display of Sweet Peas which occupied a centre table extending the whole length of the spacious marquee was the finest ever seen in Gloucester, and occasioned the judges no little difficulty in fixing the awards. Mr. MEATH BAKER, of Harfield Court, won the N.S.P.S. Silver Medal for 12 distinct varieties. Among the newer varieties in this exhibit were Senator Spencer, Mrs. Townsend, Zarina and Aurora Spencer.

The exhibition, which was attended by the Mayor and Corporation of Gloucester, was formally opened by Lady Marling.

BECKENHAM HORTICULTURAL.

JULY 13.—The Croydon Road recreation grounds were again placed at the service of the society by the local council for the holding of the annual flower show, which took place on this date in beautiful weather. The attendance in the early stages of the show was not so large as usual, but, later, the number of visitors was well up to the average. There were no fewer than 15 groups of plants, these being accommodated in the largest tent, with the specimen stove and greenhouse plants. The best group of plants arranged for effect was shown by E. J. PRESTON, Esq., Kelsey Park (gr. Mr. M. Webster). Carnations formed an outstanding feature of his exhibit, and these were interspersed with Codiaums and other foliage plants, and completed by an edging of Caladiums argyrites. 2nd, W. POTTER, Esq., Elmside, Beckenham (gr. Mr. F. G. Cogger). A special 1st prize in this class was awarded to Mr. H. DUDNEY, The Nurseries, Erith. In the class for a group of plants open to single-handed gardeners only, the 1st prize was won by A. W. OAKES, Esq., Knickwood, Shortlands (gr. Mr. W. Fane), who had some well-grown plants of Caladiums, Gloxinias, and Lilium auratum. The 2nd prize was won by C. E. FIRMIN, Esq., Langley Road, Beckenham (gr. Mr. J. Draper), whose group was a clever arrangement of miscellaneous flowers and plants.

In the class for three flowering greenhouse plants, Mr. POTTER excelled, one of his specimens, a plant of *Ixora Prince of Orange*, being adjudged

the best plant in the show, and, as such, received the Royal Horticultural Society's Medal. Three foliage stove or greenhouse plants shown by Mr. WEBSTER, were easily first in that particular class. Mr. W. FANE showed the best four plants in the class for single-handed gardeners; whilst Mr. POTTER won in that for six miscellaneous plants. The best specimen plant in flower was *Clerodendron Balfouri*, shown by Mr. PRESTON, and the same winner secured the premier award for Fuchsias. Mr. G. SALE, Braxholme, showed finest Pelargoniums; whilst Mr. FANE excelled with Gloxinias. In the fruit classes, Mr. PRESTON was a prominent prize-winner.

DERBYSHIRE AGRICULTURAL AND HORTICULTURAL.

JULY 13, 14.—This society, which has existed for upwards of half a century, held its annual exhibition on these dates. The portion of the show devoted to horticulture included a large circular tent, and the interior presented a picture of floral beauty. The principal class was for a group of plants to fill a space of 300 superficial feet, the 1st prize being £20. There were three entrants, Mr. W. HASLAM, of Pilsley, Chesterfield, winning the 1st prize with a display of *Codiaeums* interspersed with Orchids, artistically arranged with foliage plants. 2nd, Mr. W. A. HOLMES, Chesterfield; 3rd, Mr. W. VAUSE, Leamington Spa.

Another similar space was filled by Messrs. BARRON & SON, Borrowash, with a collection of Rose trees in pots, not for competition, for which a Gold Medal was awarded.

Around the walls of the tent the space was filled with trade exhibits, and so made a perfect finish to the whole picture. Messrs. PROCTOR & SONS, Chesterfield, had a fine display of Roses in great variety. (Gold Medal.) Mr. W. SYDENHAM's collection of herbaceous flowers, staged in large bunches, presented a magnificent sight. Mr. W. PATTISON, of Shrewsbury, put up a very pretty bank of Violas. Mr. E. H. COLES, of Ashbourne, showed fine examples of Sweet Peas; and Messrs. T. BOTHERA & CO., of Burton Joyce, staged a miscellaneous collection of flowers.

A specially good display of Gloxinias was made by the Rev. Hy. BUCKSTON, Sutton Hall (gr. Mr. A. Shambrook). It consisted of 300 plants, all furnished with massive heads of bloom. The same exhibitor was well ahead in the class for 18 Gloxinias.

EASTBOURNE FLOWER SHOW.

JULY 14, 15.—In connection with the Sussex County Agricultural Show a most successful horticultural exhibition was held on the above dates. The exhibition covered a considerable area of ground, and was held in a delightful spot about one mile from the station, adjoining the Downs and the links of Eastbourne Golf Club. Three large tents were not sufficient to accommodate the horticultural exhibits, several of them being arranged in the open. No money prizes were offered, but gold, silver and bronze medals were awarded.

One of the most meritorious, as well as the latest, exhibit was shown by Mr. T. DURRANT YOUNG, Roselands Nurseries, Eastbourne, who displayed finely-grown Palms and a large number of clipped trees. (Gold Medal.)

Messrs. WM. PAUL & SON, Waltham Cross, had a very large exhibit of cut Roses, including the beautiful Juliet variety. (Gold Medal.)

Messrs. W. CUTBUSH & SON, Highgate, staged a large and splendidly-arranged group of Carnations. The flowers were very fine, especially blooms of Lady Coventry. (Gold Medal.)

Messrs. BAKERS, Wolverhampton, worthily gained one of the seven Gold Medals allotted for a model water-garden. The material used was of the best, and the formation generally most pleasing.

Mr. FRANK WOOLLARD, Brighton, gained a Gold Medal for a well-arranged collection of Roses.

Another attraction was a magnificent group of miscellaneous plants staged by Mr. E. T. SCOTT, of Eastbourne. This exhibit occupied the end of one of the large tents, the whole of the plants exhibiting excellent culture. (Gold Medal.)

Messrs. J. CHEAL & SON, Crawley, had a very

large exhibit in the open, consisting of pergolas and other designs for gardens. (Gold Medal.)

Silver Medals were awarded to his Grace the Duke of DEVONSHIRE for a well-arranged miscellaneous group of plants; to Lord WILLINGTON OF RALTON for a group of plants; to Mr. WILLIAM KNIGHT, Hailsham, for a large bank of tuberous-rooted Begonias; to C. DIPLOCK, Esq., for a collection of Sweet Peas; to Mr. JAMES BOX, Lingfield, for collections of herbaceous flowers and Sweet Peas; to Messrs. JARMAN & CO., Chard, for a collection of cut flowers, including varieties of Centaureas; to Mr. RILEY SCOTT, Horsham, for a collection of hardy herbaceous flowers; to Messrs. H. B. MAY & SONS, Upper Edmonton, for a choice collection of exotic Ferns; to Messrs. G. & A. CLARE, LTD., Dover, for a large exhibit of hardy perennial flowers that included many choice subjects; to Messrs. STUART LOW & CO., Enfield, for a charming exhibit of Carnations and Roses; to Mr. FRANK LILLEY, Guernsey, for an extensive exhibit of hybrid Gladioli; to Messrs. KELWAY & SON, Langport, for an exhibit of Delphiniums; to Mr. JOHN GORE, Albion Nurseries, Polegate, and Messrs. H. G. WHITE & CO., Eastbourne, each for decorated tables of dessert fruit; to Messrs. YOUNG & CO., Cheltenham, for Carnations; to Messrs. JAMES & A. A. McBEAN, Cooksbridge, for a beautiful collection of choice Orchids; to Messrs. TOOGOOD & SONS, Southampton, for Sweet Peas, &c.; and to Mr. C. E. WATERS, of Balcombe, for Carnations.

Much of the success of the show was due to the energy and business-like methods of Mr. Rowland Burke, chairman of the special committee. Mr. Aust, chairman of the Eastbourne Horticultural Society, acted as hon. secretary, and he received valuable assistance from Mr. T. Durrant Young.

CARDIFF AND COUNTY HORTICULTURAL.

JULY 20, 21.—This society's 22nd annual show took place on the foregoing dates, and was held, as heretofore, in the Salford Gardens, Cardiff. The entries, according to official information, were more numerous ever than last year, when it was believed that lack of water mark had been reached. Although the weather was not so favourable as could have been desired, the show was, from the horticultural standpoint, a thorough success.

PLANTS AND CUT FLOWERS.

As usual, pot plants, shown either in groups or as specimens, formed a very attractive feature of the exhibition, and the competition in the various classes, although not keen, was truly satisfactory. The highest money prize offered by the society was set upon a group of miscellaneous plants in and out of bloom, staged in a space of 150 square feet, taste in arrangement and excellence of culture to be both taken into consideration by the judges. The successful competitors in this class was the firm of Messrs. JAMES CYPHER & SONS, Cheltenham. The arrangement was bold and striking, and had as its centrepiece a fine specimen of *Kentia Belmoreana*. Among the principal plants used were *Lilium Harrisii*, *Humea elegans*, various *Ericas* and *Crotons*, *Verbena Miss Willmott*, and *Cocos Weddelliana*. H. OAKLEY, Esq., Caldicot (gr. Mr. W. E. Pearse), was 2nd. His group, together with that placed 3rd in order of merit, and shown by Lady ILL, Llandaff (gr. Mr. Macintyre), were fine examples of plant arrangement. *Liliums*, *Humeas*, *Crotons*, and pyramidal *Campanulas* were freely used in both collections.

For a group occupying a space of 50 square feet, Major-general LEE, Dinas Powis (gr. Mr. Horne), was placed 1st. *Francoa racemosa*, *Statice Suworown*, and *Crotons* were the striking features of this group. J. L. MORGAN, Esq., Llandaff (gr. Mr. G. Wall), was 2nd, and the Executors of the late JAMES HOWELL, Esq., Cardiff, 3rd.

One of the finest groups in the show was set up by the Marquis of BUTE (gr. Mr. H. Farmer), and, being a non-competitive exhibit, was awarded a Gold Medal.

In the class for three stove or greenhouse Ferns, the Executors of the late J. HOWELL, Esq., put up a fine specimen of each of the following species, and they were awarded the 1st prize:—*Gymnogramma Lancheana*, *Davallia bulbata*, and *Microlepia hirta cristata*.

The entries in the Rose classes were numerous, and the competition very keen, and, considering the time of year, the quality of bloom was good. For a box of 12 distinct varieties of Roses, three blooms of each variety, Messrs. J. JEFFRIES & SONS, LTD., Cirencester, were awarded 1st place. Aimée Cochet, K. A. Victoria, Mildred Grant, Hugh Dickson, and Lyon were among the best blooms in this stand. Messrs. S. TRESEDER & SON, Cardiff, were placed 2nd. Three of the best varieties staged in this lot were Lyon, Lady Ashtown, and Horace Vernet.

Mr. GEO. PRINCE, Longworth, Berks., carried off the 1st prize for 12 distinct varieties of Teas or Noisettes, three blooms of each. The outstanding blooms were Mme. H. Berger, Medea, Mrs. E. Mawley, and Comtesse de Nadaillac. Mr. H. DREW, Longworth, was 2nd; and THE KING'S ACRE NURSERIES, LTD., 3rd.

The 1st place for 4 distinct varieties, one bloom of each, was awarded to Mr. GEO. PRINCE. The varieties Lyon, C. J. Graham, Dean Hole, Bessie Brown, and Victor Hugo were among the most attractive shown in this class. Mr. HENRY DREW and Messrs. S. TRESEDER & SON were 2nd and 3rd respectively.

With 12 blooms of Mildred Grant THE KING'S ACRE NURSERIES, LTD., secured the leading prize for 12 blooms of any one variety other than a Tea or Noisette, and the same firm were equally successful in carrying off the prize for 12 blooms of one variety of a Tea or Noisette. The variety shown was Mrs. Ed. Mawley.

The exhibits in the class for a collection of Roses set out with their own foliage and arranged for effect in a space 9 feet wide by 4 feet 6 inches deep, not to exceed 6 feet in height, were some of the most attractive in the whole show. Mr. GEO. PRINCE was a good 1st, his arrangement being tasteful and the quality of the flowers everything that could be desired. Blush Rambler, Crimson Rambler, Dorothy Perkins, and Hiawatha were used as an effective groundwork. The main features were made up of bunches of White Maman Cochet, Vicomtesse Folkestone, Pharisæer, Lyon, Mme. Constant Souper, and Mme. Melanie Souper. The 2nd and 3rd prizes were awarded to THE KING'S ACRE NURSERIES, LTD., and Messrs. S. TRESEDER & SON respectively.

Mr. C. WALL, Bath, took the premier place for a collection of border Carnations and Picotees, shown with their own foliage and without artificial supports. Some beautiful flowers were noted in this exhibit, the most distinct being Sam Weller, Ashantee, Mary Hambro', Robin Hood, and Lord Roberts. Mr. W. J. GODFREY, Exmouth, took 2nd place with blooms little inferior to those shown by Mr. WALLS.

The stands of cut flowers in the herbaceous classes were exceedingly fine, and made a brilliant spectacle in the various tents in which they were set up. Mr. W. J. GODFREY secured the leading prize for a collection of hardy flowers arranged in a space of 15 feet by 4 feet. Violas were used very effectively as an edging for this group. Messrs. RICH & Co., Bath, carried off the 2nd award with a very fine collection of flowers, among which were good examples of Chrysanthemum maximum var. Mrs. C. Lothian Bell and Princess Henry and Campanula turbinata var. Isabel.

Sweet Peas were generally admitted to be the *pride de résistance* of the show, and the exhibits were both numerous and of a very high standard of excellence. Those staged by Mr. T. JONES, of Ruabon, in the class for 18 distinct varieties were the admiration of everyone who beheld them. Every one of the varieties shown had exceedingly long and strong stems, and the size and colouring of the blooms were remarkable. Dazzler, Zarina, Mary Gerhold, Elsie Herbert, Audrey Crier, and Stirling Stent were among the most attractive varieties shown. VERNON HILL, Esq., Langford, Bristol, was placed 2nd, and Mr. W. J. GODFREY 3rd.

Miss BURGESS, Stow Park Avenue, Newport, took the 1st prize for a table arranged with Sweet Peas. Only one variety—Countess Spencer—was used, and the utility of the Sweet Pea for this purpose was well demonstrated.

FRUIT AND VEGETABLES.

The Fruit and Vegetable exhibits were not so remarkable as those in the flower classes, and the entries were by no means numerous.

G. A. GIBBS, Esq., M.P., Flag Bourton (gr. Mr. S. Wilkinson), with Muscat of Alexandria,

took the 1st prize for two bunches of a white Grape; and E. H. EBSWORTH, Esq., Llandough Castle, Cowbridge (gr. Mr. German), with Buckland's Sweetwater, was placed 2nd.

D. C. LYSAGHT, Esq., Chepstow (gr. Mr. H. Perry), was awarded the 1st prize for two bunches of black Grapes, the variety shown being Madresfield Court.

The Marquis of NORTHAMPTON, K.G., Castle Ashby (gr. Mr. A. R. Searle), was the successful competitor in the class for a collection of vegetables consisting of nine distinct kinds.

TRADE EXHIBITS.

A Gold Medal was awarded to each of the following firms:—THE KING'S ACRE NURSERIES, LTD., for a collection of fruit trees in pots; Messrs. WEBB & SON, for collections of Sweet Peas and vegetables; Mr. H. ECKFORD, collection Sweet Peas; Messrs. YOUNG & Co., Cheltenham, for American Carnations; Mr. L. R. RUSSELL, Richmond, collection of Ivies; and Messrs. W. & H. EVANS, Cardiff, for rock plants.

Silver Medals were awarded to Messrs. J. C. WHEELER for Sweet Peas and Carnations; Messrs. STARK & SONS, Sweet Peas; Messrs. TOOGOOD & SONS, Sweet Peas; Messrs. JARMAN & Co., Roses; F. EAMES, Frome, hardy cut flowers; Messrs. W. J. GODFREY, Carnations; FRANK LILLEY,



THE LATE GEORGE TUBB.

Guernsey, Gladioli; Messrs. W. H. ELLISON, West Bromwich, Ferns; Messrs. W. & H. EVANS, herbaceous plants; Messrs. CLIBRAN, Roses; Messrs. BLACKMORE & LANGDON, Bath, Carnations and Begonias; and Messrs. A. A. WALTERS & SON, Taunton, hardy herbaceous plants.

NOTES FROM A "FRENCH" GARDEN.

THE Cauliflowers planted on the cloche beds and in the open ground in April having been marketed, the beds have been dug and levelled, and Carrot "Bellot" has been sown broadcast. The seeds have been covered 1 inch deep with well-broken manure. Frequent but light waterings are given to hasten germination. This crop has always been remunerative when marketed in October, in the same manner as those grown on hot-beds.

When the frames from the Melon beds become available for further use, they are set on a piece of open ground, which has been prepared previously, and another batch of Carrot, "Early Parisian," is sown broadcast early in August. This crop follows the Carrot "Bellot" at the end of October, and requires glass protection for 2 or 3 weeks immediately before they are ready for the market. The plants must be cultivated very thinly to prevent the foliage decaying during wet weather. Tomatos in the open have been sprayed this week for the second time with "Strawsonite." All the plants will be stopped

by the 25th of this month at the leaf over the last made inflorescence, as the flowers appearing at a later date have only the remotest chance of producing ripe fruits. The ground occupied by Turnips and Carrots in the open in the spring has been prepared for a crop of Beans, "Little Nigra." The seeds are sown in 24 holes at equal distances, in a plot measuring 4 feet 3 inches by 13 feet (size of a frame), 6 to 8 seeds being placed in each hole. The frames will be placed on the ground early in September from the last Melon beds. This crop will be ready in October and November.

A first sowing of Spinach will be inserted early next week for autumn use. The winter batch will be sown a fortnight later.

The ground for the winter batch of Endives and Batavian Green must be prepared at an early date, so that they will be ready for planting between August 15 and 20. A sowing of Lettuces, "All the Year Round" or "Vauxhall Defiance," has been made this week, and the seedlings will be transplanted into frames 9 inches apart. The lights will be placed on the frames late in September. The crop must not be planted where the Lettuces will be picked out in October or grown in the early spring, as it is liable to mildew. The Celery, "Chemin," sown in February and planted in the middle of May, at 9 inches apart, is now ready for blanching; this will be effected by spreading mats on the top. Owing to the close planting the blanching will not take more than 6 or 8 days. Before placing the mats the beds must be thoroughly soaked, in order that they may not require any more watering before marketing.

The Melon plants are now in full bearing. The ventilators must be left open a little at night to prevent the deposit of moisture on the fruits. The fruits must be turned often, especially the big specimens, or they will decay. Should the weather improve the lights may be removed entirely. *P. Aquatias.*

Obituary.

GEORGE TUBB.—We regret to record the death of Mr. George Tubb, in his 63rd year, at Minley Manor Gardens, Hampshire. Mr. Tubb has been gardener to three generations of the present owner's family, Laurence Currie, Esq., his period of service extending for upwards of 35 years. During his long service at Minley Manor many improvements and alterations were effected in the gardens. A description of these will be found in the *Gardeners' Chronicle* for December 12, 1891. Deceased was highly esteemed, and his presence will be missed by a large circle of friends. He was a prominent supporter of the Gardeners' Royal Benevolent Institution. The funeral took place on Monday, the 11th inst., at Cove Churchyard, in the presence of a large concourse of friends.

JOHN BENNETT CARRUTHERS.—As our pages are passing through the press, we receive news of the death of Mr. J. B. Carruthers, F.R.S.E., F.L.S., Assistant Director of Agriculture at Trinidad, and an occasional contributor to these pages. Deceased was the younger son of Mr. William Carruthers, F.R.S., late Keeper of the Botanical Department of the British Museum. He was 41 years of age, and, previous to taking up the appointment at Trinidad, he filled important positions in Ceylon and the Federated Malay States.

DEBATING SOCIETY.

STIRLING & DISTRICT HORTICULTURAL.—The members held their second outing of the season on July 9, when a visit was made to Blair Drummond, the seat of Colonel Home Drummond. The party were met by Mr. Blacklock, the gardener at Blair Drummond, who conducted them through the gardens and grounds.

GARDENING APPOINTMENTS.

Mr. H. ROBINSON, Outdoor Kitchen and Fruit Foreman at Leonardslee for the past 5 years, under Mr. W. A. COOK, as Gardener to Major K. R. BALFOUR, Kingston House, Dorchester, Dorset.

Mr. E. THAYER, recently Gardener to E. W. BARRON, Esq., Woodstown, Co. Waterford, and previously for 5 years General Foreman at Eastwell Park, Kent, as Gardener to BAILEY-HAWKINS, Esq., Stagenhoe Park, Welwyn, Herts.

MARKETS.

COVENT GARDEN, July 20.

cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in one day.—Eds.]

Cut Flowers, &c.: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
strömberia, p. dz.		Lily of the Valley,	
bunches ...	3 0-4 0	extra quality ...	9 0-12 0
variegata ...	4 0-6 0	Marguerites, p. dz.	
la (see Richardia)		bunches white	
various, p. doz.		and yellow ...	1 6-2 0
blossoms, best		Mignonette, per	
American (var.)	1 0 —	dozen bunches	2 0-3 0
Carola, special	2 6-3 0	Odontoglossum	
second size ...	1 6-2 0	crispum, per	
smaller, per		dozen blossoms	2 6-3 6
doz. bunches	12 0 —	Pelargonium,	
trileys, per doz.		show, per doz.	
blossoms ...	12 0-15 0	bunches ...	3 0 —
reopsis, p. doz.		Zonal, double	
bunches ...	1 6 —	scarlet ...	3 0-5 0
rhododendrons, blue,		Poppies, Iceland,	
p. dz. bunches	1 0-1 6	per doz. bunches	1 0 —
white and pink	1 6-2 0	Richardia africana	
lupinus, per doz.		(Callia), per	
bunches	5 0-6 0	dozen ...	2 0-2 6
charis grandiflora,		Roses, 12 blossoms,	
per dozen	2 0-2 6	Niphetos ...	0 9-1 6
Richardia, p. doz.		Bridesmaid ...	1 0-1 6
bunches ...	2 0 —	C. Testout ...	0 9-1 6
Richardia, per		Kaiserin A.	
dozen ...	2 6-3 0	Victoria ...	1 0-1 6
Idolus, Colvillei		Capt. Hayward	1 0-2 0
"The Bride,"		C. Metmet ...	1 0-1 6
per doz. bunches	3 0-4 0	Liberty ...	1 0-1 6
Psychotria elegans,		Mine Chatenay	1 0-2 6
p. dz. bunches	3 0-4 0	Richmond ...	1 0-1 6
ather (white),		The Bride ...	1 0-2 0
per bunch ...	1 0 —	Scabiosa caucasi-	
pagieria, white,		ca, p. doz. bun.	4 0-5 0
per dozen ...	2 0 —	Stephanotis, 72	
rum auratum		"pips" ...	1 0-1 3
per bunch ...	3 0-3 6	Statice, blue, p. dz.	
candidum ...	1 0 —	bunches ...	5 0-6 0
longiflorum ...	1 6-2 0	yellow ...	4 0-5 0
lancifolium		white ...	4 0-5 0
rubrum ...	2 6 —	Stocks, per doz.	
lancifolium		bunches ...	3 0-6 0
album ...	1 6-2 0	Sweet Peas, per	
of the Valley,		dozen bunches ...	1 6-2 6
p. dz. bunches	6 0-8 0	Tuberose, p. gross	3 0 —

Cut Foliage, &c.: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
antium cuneat-		Galax leaves, per	
um, per dozen		doz. bunches	1 6-2 0
bunches ...	4 0-6 0	Hardy foliage	
paragus plum-		(various), per	
osus, long		dozen bunches	3 0-5 0
trails, per doz.	3 0-6 0	Ivy-leaves, bronze	2 0-2 6
medium, doz.		long trails per	
bunches ...	12 0-15 0	bundle ...	1 0-1 6
Sprengeri ...	9 0-12 0	short green,	
odon leaves, per		per doz. bunches	1 0-2 0
dozen bunches	9 0-12 0	Moss, per gross	4 0-5 0
cas leaves, each	1 0-2 0	Myrtle, dz. bchs.	
rus, per dozen		(English),	
bunches (Eng-		small-leaved ...	4 0-6 0
lish) ...	4 0 —	French ...	1 0-1 6
(French) ...	6 0 —	Smilax, p. dz. trails	2 0-3 0

Plants in Pots, &c.: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
alia Sieboldii, p.		Ficus elastica, per	
dozen ...	5 0-8 0	dozen ...	8 0 —
larger speci-		repens, per dz.	6 0-8 0
mens ...	9 0-12 0	Fuchsias, per dz.	6 0-9 0
Moseri ...	6 0-8 0	standards, each	2 0-4 0
larger plants ...	12 0-18 0	Grevilleas, per dz.	4 0-6 0
aucaria excelsa,		Heliotrope, per dz.	5 0-6 0
per dozen ...	12 0-30 0	Hydrangeas hor-	
large plants,		tensis, per doz.	9 0-12 0
each ...	3 6-5 0	panculata	
pidistras, p. dz.		grandiflora ...	18 0-21 0
green ...	15 0-24 0	Isolepis, per dozen	4 0-6 0
variegated ...	30 0-42 0	Kentia Belmore-	
paragus plumo-		ana, per dozen	18 0-24 0
sus nanus, per		Fosteriana, per	
dozen ...	9 0-12 0	dozen ...	18 0-30 0
Sprengeri ...	9 0-12 0	Latania borbonica,	
tenissimus	9 0-12 0	per dozen ...	15 0-21 0
ilceolaris, yel-		Lilium longi-	
low, per doz.	5 0-6 0	florum, per dz.	12 0-15 0
ematis, per dz.	8 0-9 0	lancifolium, p.	
in flower ...	18 0-24 0	dozen ...	9 0-10 0
occos Weddelli-		martagon per	
ana, per dozen	18 0-30 0	dozen ...	18 0-21 0
pleus, per doz.	4 0 —	Lily of the Valley,	
otons, per dozen	12 0-18 0	per dozen ...	12 0-13 0
perus alterni-		Marguerites, white,	
folius, per doz.	4 0-5 0	per dozen ...	5 0-6 0
laxus, per doz.	4 0-5 0	Mignonette, per	
onymus, per dz.		dozen ...	4 0-6 0
in pots ...	3 0-8 0	Pelargoniums	
from the ground	3 0-6 0	(show), per doz.	8 0-10 0
rus, in thumbs,		Ivy leaved, per	
per 100 ...	8 0-12 0	dozen ...	4 0-6 0
in small and		Zonal ...	3 0-4 0
large 60's ...	12 0-20 0	Selaginella, p. doz.	4 0-6 0
in 48's, per dz.	4 0-6 0	Verbena, per doz.	5 0-7 0
in 36's, per dz.	8 0-12 0		
in 32's, per dz.	10 0-15 0		

REMARKS.—There has been a general decline in the demand for plants and flowers, except for a few special subjects, such as Odontoglossums, Cattleyas, and other choice Orchids, which are required for show purposes. Blooms of Lilium longiflorum are arriving in large quantities and their prices are depreciating. Lily of the Valley is a steady supply at 10s. to 12s., and occasionally 15s., per dozen bunches. White Stocks have been a very ready sale as they have been the principal white flowers available for foundation work in floral designs. A. H., Covent Garden, July 20, 1910.

Fruit: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Apples (Tasmanian),		Grapes (English),	
per case:		per lb.:	
New York ...	14 0 —	Hambro ...	0 10-1 6
Scarlet Non-		Colmar ...	1 9-3 0
pareil ...	11 6-12 6	Belgian Hambro	0 9-1 0
Scarlet Pear-		Greengages (Span-	
main ...	12 0 —	ish & Italian),	
Sturmer Pippin	14 0 —	per box ...	1 6-2 6
French Crab ...	10 6 —	per 1/2 sieve ...	12 6-14 0
Five Crowns ...	11 0-11 6	per round ...	3 6-3 9
Apricots (French),		Lemons:	
per box ...	1 6-2 0	Messina (150) ...	6 0-6 6
per case ...	5 6-6 6	Naples (420) ...	21 0 —
1/2 bushel ...	12 0-16 0	selected ...	25 0 —
Bananas, bunch:		Murcia (310) ...	10 0 —
Doubles ...	11 0-12 0	large ...	12 6 —
No. 1 ...	9 0 —	Melons (English ...	1 6-3 0
Extra ...	10 0 —	(Guernsey) ...	1 6-3 0
Giant ...	12 0-15 0	(French, Can-	
Red coloured ...	4 0-5 6	taloupes, each ...	2 6-5 0
Red Doubles ...	8 0-9 0	(Spanish, net-	
Loose, p. doz.	0 6-1 0	ted, per case,	
Cherries (English		24's ...	12 6-13 6
and French),		36's ...	13 6-15 6
per peck:		Nectarines, dozen:	
Florence ...	10 0-16 0	selected ...	8 0-10 0
French Flap-		seconds ...	4 0-6 0
pers ...	9 0-10 0	Nuts, Almonds, p.	
Flemish ...	9 0-10 0	bag ...	36 0-42 0
May Duke ...	9 0-10 0	Brazils, new,	
Elton ...	12 0 —	per cwt ...	48 0 —
Amber Gean ...	10 0 —	sorted ...	55 0 —
Burgreau Na-		Barcelona, per	
poleon ...	8 0-12 0	bag ...	32 0-34 0
Burgreau ...	6 0-10 0	Cocoanuts, 100	10 0-14 0
Black Cherries	9 0-12 0	Oranges—	
Currents (French		Denia, per case	
and English),		(420) ...	20 0-25 0
per 1/2 sieve,		(714) selected ...	24 0-26 0
Black ...	6 0-8 0	Murcia (200) ...	16 0-18 0
Red ...	4 6-5 6	(300) ...	18 0-20 0
pecks ...	2 6-3 0	Peaches (English),	
Figs, per dozen	2 6-6 0	per doz. ...	10 0 —
(Italian), box ...	2 6 —	seconds ...	4 0-6 0
Gooseberries, 1/2 bus.	4 0-5 0	Pineapples, each ...	2 0-5 0
per peck ...	2 6-2 9	(Florida), per	
Grape fruit, case:		case, 30, 36 ...	16 6-20 0
96's ...	20 0 —	Plums, green, 1/2	
80's ...	20 0 —	bushel ...	6 0-7 0
64's ...	20 0 —	Raspberries (Eng-	
54's ...	20 0 —	lish), handle ...	1 0-1 6
Grapes (English,		per cwt ...	17 0 —
per lb.:		Strawberries, per	
Alicante ...	1 3-1 9	dozen punnets	4 0-6 0
Madresfield		(Kent), per	
Court ...	2 6-3 6	handle ...	1 0-1 6
Muscats ...	1 6-3 6	Tangerines (Naar-	
Canon Hall ...	2 9-6 0	jes), per box ...	1 6-4 0

Vegetables: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Artichokes (Globe),		Mint, per dozen	
per dozen ...	1 6-2 0	bunches ...	2 0 —
Aubergines, doz.	1 6-2 0	Mushrooms, p. lb.	1 0-1 3
Beans (English and		broilers ...	0 10 —
Chan. Islands),		Mustard and Cress,	
per lb. ...	0 6-0 9	per dozen pun-	0 6-0 8
Broad (French),		Onions (spring), dz.	
per pad ...	2 6-3 6	bunches ...	2 0-3 0
per packet ...	0 4-0 6	Egyptian, bags	4 0-5 0
Broad Beans (Eng-		New Spanish,	
lish), per bus.	2 0 —	case ...	4 0-5 6
Cabbages, tally	3 0-5 0	Parsley, pr. doz.	2 0-3 0
Carrots (English),		Peas (French), per	
dozen bunches	1 0-1 6	pad ...	4 6-5 0
(French), per		Mid Hesse, per	
doz n bunches	4 0-5 0	bushel ...	3 6-4 6
Cauliflowers, ham-		bags ...	5 6-8 0
per (24 30) ...	4 0-6 0	Potatoes (Channel	
per doz. (large)	2 0 —	Islands), per	
Dutch, p. crate	3 6 —	cwt. ...	7 0 —
Cucumbers, per		Radishes (Eng.), p.	
flat ...	4 6-7 0	doz. bunches ...	1 0-1 6
Endive, per dozen	1 0-2 6	Stachys tuberosa,	
Greens, Spring, bag	1 0 —	per lb. ...	0 4-0 5
Herbs (sweet),		Tomatoes—	
packets, per		(English), per	
gross ...	7 0 —	dozen lbs. ...	4 0-4 6
Horseradish, for-		small selected	4 0 —
eign, new, per		seconds ...	2 0 —
bundle ...	1 6-2 0	(Guernsey), per	
12 bundles ...	18 0-24 0	dozen lbs. ...	4 0-4 6
Lettuce (English),		(Spanish), per	
per bushel ...	0 9-1 6	case "Flats" ...	8 0 —
hamper ...	2 0-3 0	Plums ...	15 0 —
Cos, per dozen	1 0 —	Turnips, 12 bchs.	4 0 —
(French), Cos,		(French) ...	4 0-5 0
per dozen ...	1 6-2 0	Watercress, p. dz.	
Marrows, per doz.	2 6-3 0	bunches ...	0 6-0 6

REMARKS.—Black Currants are a short supply consequently their prices have risen considerably. Cherries are still expensive and poor in quality. English Grapes are a fair market. Some fine bunches of Madresfield Court are to be seen, and the demand is very good; this Grape generally finds a good market; Black Hambro' is more plentiful and cheaper. Home-grown scarlet-flesh Melons of good size would meet a good market. Peaches and Nectarines are a little cheaper, but the best-coloured fruits are meeting with a fair demand. Strawberries in pecks have finished, but some good samples are to be obtained in punnets. Raspberries are arriving in a wet condition and are much dearer. Tomatoes are cheaper. Green vegetables are generally plentiful. Trade on the whole is quiet.—E. H. R., Covent Garden, Wednesday, July 20, 1910.

New Potatoes.

	per cwt.		per cwt.
Kents—	s.d. s.d.	Bedfords—	s.d. s.d.
Sharpe's Express	4 0-4 6	1 peaches ...	3 3-3 9
Eclipse ...	4 0-4 3	May Queens ...	3 6-3 9
Epicures ...	3 6-3 9	Lincolns ...	
May Queens ...	3 9-4 3	Sharpe's Express	3 9-4 0
Bedfords ...		Epicures ...	3 3-3 9
Eclipse ...	3 6-4 0	Blacklands ...	3 3 —

REMARKS.—Trade continues slow and prices are not good for the time of year. Edward J. Newbourn, Covent Garden and St. Pancras, July 20, 1910.

THE WEATHER.

THE FOLLOWING SUMMARY RECORD of the weather throughout the British Islands, for the week ending July 16, is furnished from the Meteorological Office:—

GENERAL OBSERVATIONS.

The weather.—During the greater part of the week the weather was dry in all districts, but in the south and east of England the sky was often very cloudy. A little rain fell in several localities towards the end of the period, and on the evening or night of the 16th thunderstorms were experienced on some parts of our southern and south-eastern coasts.

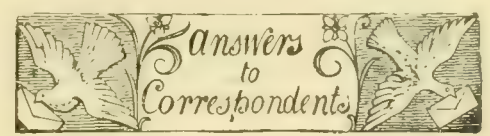
The temperature was again below the average in all parts of England, except the north-west, the deficit amounting to at least 3° in Eng. and E. and S.E. In Ireland and the north and west of Scotland it exceeded the normal—by more than 2° in Scotland W.—but in the east of Scotland the mean value was 2.1 below the average. The highest of the maxima were recorded at most stations about the middle of the week, and ranged from 61° in Scotland W. and England N.W., and 60° in Scotland E. to 73° in England E. and the English Channel. Maxima below 60° were very common in the north and east coasts, at North Shields there was no reading as high as 60°. The lowest of the minima were generally recorded early in the week. In Scotland E. at Balmoral on the 11th the thermometer fell to 31°, but in the other districts the minima range from 40° in Scotland N. and W. to 44° in Eng. and E. and Ireland S., and to 50° in the English Channel. The lowest glass readings were 29° at Balmoral, 33° at Sheffield and Newton Regis, and 34° at Grathes and West Linton.

The rainfall.—Over a large portion of the Kingdom there was either no rain or less than 0.05 inch; in the south-east and south a few localities experienced about 0.5 inch with the thunderstorms noted above. The bright sunshine was much above the average in Ireland, Scotland, and the north-west of England, and slightly above it in England S.W. and the Midland Counties; in the south, south-east and east of England, however, there was a great deficiency. The percentage of the possible duration ranged from 74 in Ireland N., 69 in England N.W., and 61 in Scotland W. and Ireland S. to 30 in England S.E., 28 in England N.E., and to 25 in England E.

THE WEATHER IN WEST HERTS.

Week ending July 20.

Another cold week and the fourth in succession.—On the warmest day the temperature in the thermometer screen rose to 72°, which is only about 2° warmer than is seasonable, and on the coldest night the exposed thermometer registered a temperature within 4° of the freezing point—a very low reading for the middle of July. The ground is at the present time 2° colder than is seasonable, both at 1 and 2 feet deep. Rain fell to the depth of about a tenth of an inch on the 17th, but previous to that no rain had fallen for nine days. In the early part of the week a few drops of rainwater came through both the soil gauges, but since then there has been no percolation at all through either of them. The sun shone on an average for 5 1/2 hours a day, which is an hour a day short of the average duration at this period of the month. On one day the sun shone brightly for 13 1/2 hours, but on three others the amounts recorded were less than an hour a day. Calms and light airs have alone prevailed during the week, and the direction has been on all but one day some point between north and east. The mean amount of moisture in the air at 3 p.m. exceeded a seasonable quantity for that hour by as much as 15 per cent. E. M., "Rosebank," Berkhamsted, July 20, 1910.



A GREENGROCER'S PROFIT: C. M. You ask what profit should result on the sale of £20 worth of fruit and vegetables retailed at ordinary London prices? This is rather a difficult question to answer with any degree of accuracy, as so much depends upon circumstances. However, assuming that you get good value for your money and there is a ready demand for the produce, you should clear at the least £8 or £10 on your outlay, seeing that fruiters and greengrocers, as a rule, retail their goods at double the wholesale prices paid for same. There is much wastage in the handling of such perishable goods, and this loss must be made good from the profits on those which are actually sold.

ANTIRRHINUM AND IRIS KEMPERI: S. J. L. No trace of injury by fungi or insects can be found on any of the specimens. The injury is the result of unfavourable cultural conditions.

CALCEOLARIA AND PELARGONIUM: *J. P. B.* The disfigurement of which you complain as being similar to scalding, is probably caused by the flowers being sprayed with water directly before or during brilliant sunshine. There is nothing present that can be interpreted as an indication of disease.

CARNATION LEANDER: *G. F.* The black centre is caused by the fungus, *Ustilago antherarum*, which has developed in the anthers. This fungus is common in the wild *Lychnis*, and has probably passed from thence to the cultivated plants. In *Lychnis* the mycelium of the fungus is perennial in the root, and grows up with the plant each year, so that when a plant is once attacked by the disease it remains for life. Plants can only be infected during the seedling stage. Destroy the blooms, and do not propagate from plants showing the disease.

CARROTS: *E. C.* The maggots do not appear to be present in the roots forwarded, although evidences of the attack exist, and there is little doubt but that the pest is the maggot of the Carrot fly, *Psila rosæ*. The maggots have no legs, and are about $\frac{1}{4}$ inch long. When fully fed they go into the earth before entering the pupal stage. The flies are blackish-green, with ochre-coloured head and legs. They lay their eggs in the ground near to the Carrot roots, and it is generally noticed that the plants are mostly attacked by fly directly after they have been thinned. During this process the soil about the roots is loosened. The soil should be so treated before sowing that the plants will be capable of growing quickly and without check. Any thinning that is done should be carried out before the plants are 2 inches high, and it should be done in damp weather as carefully as possible. Following the process of thinning, a good watering should be afforded if the weather is dry, and a sprinkling of guano or other approved manure, the object being to cause the plants to grow quickly, and thus establish themselves again in the soil. As a preventive it has been found useful to rough-dig the ground at the beginning of winter, and sprinkle gas-lime over the surface until it is quite white; the lime is then "pointed" in about four inches deep. Vaporite might be mixed with the soil as an experiment.

CROQUET GROUND: *Juvénile.* The particulars you require, together with plans, were given in the *Gardeners' Chronicle* for May 22, 1909, p. 336.

DISQUALIFICATION AT AN EXHIBITION: *W. B. G. and Doubtful.* The literal wording of the schedule would allow of two varieties of a single species being shown, as, for instance, two varieties of *Pyrethrum roseum* or *Chrysanthemum indicum*. It may be that the judges disqualified the *Hydrangea arborescens grandiflora* on the ground that this species is hardy, and, therefore, inadmissible in a class for 12 bunches of stove and greenhouse flowers. In this latter case there is something to be said for their decision.

EXAMINATIONS IN HORTICULTURE: *J. A. B.* Examinations in horticulture for journeymen gardeners are held periodically by the Royal Horticultural Society. You had better apply to the secretary of this Society at the Royal Horticultural Hall, Vincent Square, Westminster.

GOOSEBERRIES: *W. W., Holland.* The following dessert varieties may be recommended for the purpose you desire them:—Howard's Lancer (very free bearing, strong grower, excellent flavour), Lancashire Lad, Crown Bob, Whinham's Industry, Broom Girl, Gunner, Keepsake, Leveller, Plough Boy, Rifleman, Thumper, and White Lion.

INSECTS IN CUCUMBER FRAME: *J. P.* Vaporise the frame with one of the nicotine vaporising compounds. Place a little "Vaporite" here and there in the soil.

NAMES OF PLANTS: *T. B. B.* *Trifolium procumbens*. This plant will grow almost anywhere.—*E. F.* It is impossible to name the Ferns correctly unless you send better specimens.—*W. H. Christian.* 1, *Berberis vulgaris foliis purpureis*; 2, *Cotoneaster Simoni*; 3, *Æsculus flava*; 4, *Cryptomeria japonica*; 5, *Escallonia macrantha*; 6, *Desfontainia spinosa*; 7, *Cryptomeria japonica elegans*; 8, *Cephalotaxus pedunculatus*.—*O. Wills.* *Cratægus tanacetifolia*.—*C. W.* 5, *Collinsia bicolor*.—*R. P. B.* *Egopodium podagraria* (Gout

Weed).—*J. E. J.* *Chrysanthemum leucanthemum* variety.—*A. M.* *Brachycome iberidifolia*. *J. U.* We cannot undertake to name varieties of Roses. Send them to some grower who has means of comparing them with a named collection.—*C. A.* *Centranthus ruber*.—*O. E. C.* 1, *Oncidium triquetrum*; 2, *O. pumilum*; 3, *Aërides multiflorum*; 4, *Odontoglossum gloriosum*.—*R. H.* 1, *Blechnum occidentale*; 2, *Adiantum tenerum*; 3, *Lastrea varia*; 4, *Woodsia alpina*.—*E. E. K.* This is the common horsetail (*Equisetum arvense*). It is a most difficult plant to eradicate, because it is impossible to pull out the roots, which break off very easily. A good remedy is to trench the ground and pick out every bit of root that can be found. We have seen an instance of a piece of ground being almost cleared of the weed by sowing it down with Barley and Clover. These crops had the effect of stifling much of the Horse Tail.

PEACH: *S. T. N.* The variety of Peach is Royal George. Thanks for sending good specimens, properly packed.

REFUSE FROM CANDLE MANUFACTURE: *W. L. S.* Bone-black, as received from the sugar refineries, contains the impurities gathered there, consisting chiefly of vegetable matter and moisture. It is somewhat variable in composition, containing from 32 to 36 per cent. of phosphoric acid, 38 per cent. of lime, and a small amount of nitrogen. Its decomposition in the soil is slow, and it is not now used to any great extent directly as a manure, because soluble phosphate can be produced more economically from mineral phosphates. After the bone-black has been used in the manufacture of candles, and has absorbed large quantities of fat, it becomes almost useless as a manure, the fat being decidedly injurious to all plant life. Wagner recommends the extraction of the fat by means of petroleum, but this is scarcely practicable for amateurs. Another plan is to burn the bone-black, which will destroy the fat, but leave the phosphoric acid and lime uninjured, when it can be used as manure at the rate of from 3 to 4 cwt. per acre. About five tons of farmyard or stable manure is recommended each year to a quarter acre of land; in your case, the soil being heavy and poor, the manure should be applied in the winter so as to be well incorporated with the soil before the spring sowing of crops.

ROSE LEAVES: *H. G., F. E. S. & Co., and Reader.* The leaves are disfigured with "black blotch," caused by the fungus *Antionema rosæ*. It is not a very destructive disease, but its presence is objectionable owing to the disfigurement the blotches cause to the foliage. It appears to be very common just now. Spray the plants at intervals of three days with 1 ounce of liver of sulphur in 2 gallons of water.

ROSE MARECHAL NIEL: *W. H. W., Sheffield.* The specimens are insufficient for us to determine the cause of the trouble.

SCUM ON PONDS: *R. G. C. and G. L.* The Bordeaux mixture may be sprayed on to the surface of the pond, repeating the operations after the elapse of several weeks if necessary. To commence, only use it at about half strength, so as not to injure the aquatic plants. Fish that may be in the water will suffer no injury, if the operation is carried out with care.

SEEDS OF HEATHER AND LING: *W. E.* The best time to sow seeds of Heather and Ling is in April or early in May. The seeds may be sown on prepared ground out of doors in the same manner as grass seed, except that no rolling is necessary afterwards. The ground should be moist without being wet, and be raked down as fine as possible. Care must be taken that every weed is cleared off the ground before sowing, as it will be some considerable time before the seedlings are large enough to be cleaned through. At the same time a few pans or boxes of seeds can be raised under glass to fill up any bare spaces that may occur. In two years a good crop of young plants can be raised.

SEEDSMEN IN NEW YORK: *J. M.* You may write to either of the following firms:—John Lewis Childs, Floral Park; Siebrecht & Son, New Rochelle and New York City, 569, Fifth Avenue; Peter Henderson & Co., 35, Cortlandt Street, New York; J. M. Thorburn, 33, Barclay Street; Ellwanger & Barry Nursery Co., Rochester.

SUITABILITY OF ESSEX SOIL TO THE GROWTH OF FRUIT-TREES: *Fruitsoil.* The soil prevailing in most of the agricultural districts in Essex is admirably adapted to the growth of fruit trees, being of a heavy, rather than light, loamy nature. If a proper quantity of stable or farmyard manure is added to it when preparing holes for the reception of the young trees, the land is well calculated to yield satisfactory crops of fruit. If you contemplate devoting the spare land referred to in your note, exclusively to the growth of Apples and Plums, with a few Pears, then bush trees will be the most suitable and profitable form of tree to grow, inasmuch as they are less exposed than are standard trees to the wind; moreover, less labour is incurred in the gathering of the fruit in autumn. You should pay a visit to Orsett, near Grays, or Eastwood, near Southend-on-Sea, where you may see good examples of fruit-growing for profit on a fairly extensive scale. In addition to the established orchards others are now being formed in almost every parish where land is available for the purpose. The most profitable varieties of Apples to grow in the district are Warner's King, Lane's Prince Albert, Ecklinville Seedling, Bramley's Seedling, Stirling Castle, Newton Wonder, Peasegood's Nonesuch, Bismarck, Annie Elizabeth, Gascoyne's Scarlet, Lord Grosvenor, Lord Derby, Emperor Alexander, Cellini, Keswick, Codlin, Cox's Pomona, Beauty of Bath, Cox's Orange Pippin, King of the Pippins, and Worcester Pearmain. The following varieties of Plums are recommended for market culture: Victoria, Monarch, Pond's Seedling, Sultan, Goliath, Jefferson and Washington. Excellent market Pears include Williams's Bon Chrétien, Clapp's Favourite, and Beurré d'Amanlis.

TOMATO: *W. J. W.* The fruits are affected with Tomato Black Rot, caused by the fungus *Macrosporium Tomato*. Remove all fruits that exhibit symptoms of disease, and burn them at once. Spray the plants occasionally with potassium sulphide, especially when they are setting their fruits. Open the ventilators and renew the air of the house whenever the weather is favourable, being careful also to avoid having too much moisture in the atmosphere. This fungus belongs to the same species that causes leaf-curl in Potatoes (*Macrosporium solani*), and cultivators should therefore be careful to avoid using soil taken from the Tomato house for cultivating Potatoes, or soil in which Potatoes have grown for the cultivation of Tomatoes.

WALLFLOWERS: *Mr. S.* It is unnecessary to pinch seedling Wallflowers for flowering next year. If you wish to pinch them, let the pinching be completed during the present month. The young plants should be pricked out from their seed-beds on to a well-prepared piece of ground in the open, allowing a distance of 15 inches between the rows and 12 inches from plant to plant. Make the ground very firm and apply a thorough watering after the planting is done. The plants should be ready for lifting again in autumn and transplanting to the positions where they will flower.

WOODLICE: *H. G.* Traps may be prepared by hollowing out pieces of Potato, Turnip, &c., and putting the pieces, hollow side downwards, in the haunts of this pest. If the baits are examined each morning it will generally be found that they contain woodlice, which should be destroyed and the baits replaced. Similar baits may be poisoned, if desired, by soaking them in Paris Green or white arsenic. There are also several effective proprietary remedies on the market. Steiner's "Vermin Paste" should be mixed with barley meal or middlings and put on pieces of glass, wood, or tin, and then placed in the haunts of the woodlice. This remedy has been found very effective by some of our correspondents.

Communications Received.—*H. Rabjohn.*—*F. B.*—*A. & B.*—*J. D.*—*F. J. K.*—*F. J.*—*W. W.*—*T. S.*—*W. E. B.*—*F. M.*—*W. M. W.*—*Chloris*—*W. F.*—*C. J. E.*—*J. E. K.*—*Miltenberg*—*W. A. G. M. I. S.*—*E. Y.*—*Nicotine*—*S. A.*—*W. J. B.*—*C. H.*—*F. W. V.*—*B. G.*—*W. R. P. B.*—*H. S. E.*—*J. I.*—*F. J. C.*—*F. C. A.*—*W. E.*—*G. L.*—*J. S.*—*F. C. A.*—*B. F.*—*W. C.*—*J. D. G.*—*B. L.*—*D. M. C.*—*W. E. G.*—*F. B.*—*R. F.*—*Miss B. Y.*—*J. M.*—*C. S.*—*J. C.*—*W. R.*—*T. C.*—*J. H. T.*—*J. L.*—*J. P.*—*H. H.*—*H. C.*—*W. E.*—*A. B.*—*T. E.*—*R. B.*—*H. C.*—*R. W.*—*Rev. T. A. H.*—*J. H. B.*—*D. W. C. H.*—*A. B.*—*T. C.*



TULIPA HOOGIANA, A NEW SPECIES FROM BOKHARA.

PERIANTH SEGMENTS, BRILLIANT-RED WITH BLACK BLOTCH BORDERED WITH ORANGE.



THE

Gardeners' Chronicle

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THE NATURAL HISTORY OF CONIFERÆ.

CONIFERS are distinguished from other flowering plants growing in this country by the simplicity of their flowers and fruit; for the seeds are not lodged in any closed seed-chamber (ovary), though in some cases (e.g., Pines and Spruces) they may be concealed from view by means of the overlapping scales of the woody cones. But nearly all conifers also differ widely in habit from the majority of trees growing side by side with them in our gardens, parks, and woodlands, since they have small, narrow, stiff or leathery, evergreen leaves. To this rule there are exceptions in that the Monkey-puzzle (*Araucaria imbricata*) possesses broader leaves, while the Larch and trees belonging to three rarer genera have soft leaves that are shed each year. It is not only in cold-temperate Europe, Asia, and North America that forests of evergreen conifers occur, for they are also found in warm-temperate or even tropical lowland sites, and are represented even in arctic regions or at alpine heights by low bushes or isolated pygmy trees. We naturally ask the question, "Apart from conifers and their allies, where are evergreen trees found?" The answer is that broad-leaved, evergreen trees occur mainly in warm-temperate climates with winter rain and summer drought, such as prevail in Mediterranean

countries and California, also in tropical climates with very heavy annual rainfall that is scarcely or not at all interrupted by a dry season. The thousands of species of evergreen, broad-leaved trees of the equatorial forests are represented in England by only two—the Holly and the Box. Why, then, should evergreen conifers flourish and form forests in our cold-temperate climate? Why should they have evergreen leaves? And why should those leaves be narrow and stiff, instead of being broad and flexible?

To these questions various answers have been given from time to time.

On all hands, it has been admitted that the ancestors of all conifers had evergreen leaves. Evergreen conifers have merely retained characters handed down through endless generations. The Larch, Marsh Cypress (*Taxodium*), and *Pseudolarix*, which possess deciduous leaves, are the representatives that have adopted a new policy and a new habit.

Much more difficult to explain are the problems relating to the form and texture of the leaves, and linked with these is the question, "Why did not conifers follow the fashion prevailing in cold-temperate regions by becoming deciduous?"

One explanation put forward to account for the shapes of the conifer leaves was that, since the leaves are evergreen, conifers are especially liable to be overlaid with snow in winter. Such overloading endangers the life of the tree in two ways: First, directly, by causing the tree to be overturned; second, by causing breakage or rupture of the branches, and thus occasioning wounds through which many tree-destroying fungi gain entrance. There is one strong objection to this explanation, namely, that many kinds of conifers, though they live only in regions where snow occurs rarely or never, yet they possess foliage of the typically conifer type.

The stiff texture and the thick impermeable nature of the skin of the leaves were formerly interpreted as being devices by which the leaves derived protection against severe frosts. And, in support of this interpretation, it was pointed out that the Holly and Box trees, which retain their leaves during winter, have the same stiffness and the same thickness of skin. But against this explanation is the fact that many conifers with stiff and narrow leaves find their homes solely in places where the winter is mild and is possibly the season most favourable to the active working of the tree.

This plausible explanation links itself with the next theory, which explained the form and structure of the leaves on the ground that they serve to guard against a danger that is caused sometimes by cold and sometimes by other agencies—lack of available water. We do not thoroughly understand why plants die from cold. (Some interesting considerations on the question were offered in the columns of the *Gardeners' Chronicle* of January 8, 1910). It is often true that death from cold is in reality death from want of water. However cold the weather may be, evaporation can go on rapidly, as it often does in the arctic winter, so that a plant possessing leaves during winter is exposed to the danger of losing much water from their surfaces. But, during our cold winter, as the soil becomes colder and colder, the roots, deep and shallow alike, absorb water with increasing

difficulty and in decreasing quantities (though it is a mistake to suppose that the deep roots entirely cease to absorb). Consequently, if they are to avoid desiccation at this season, the trees must decrease their evaporation by throwing off the leaves that are the main vehicles by which the water is transpired, or they must possess leaves that transpire very slowly or not at all in winter. Hardy evergreen conifers possess leaves of the latter kind. Their "needles" are small, narrow, and usually relatively thick, so that each leaf presents only a small evaporating surface. Moreover, each leaf has a thick skin (epidermis and often hypodermis), whose thick walls form a nearly impermeable barrier to the outward passage of water, and are incidentally responsible for the stiffness of evergreen coniferous foliage. And even where there are openings (stomata) in the skin (epidermis) these are sunk below the level of the surface, and are thus withdrawn from the drying influence of air currents. Finally, in winter—at least when the cold is severe—the stomata are blocked more or less completely. Thus the Larch has soft, flexible foliage because its leaves are not compelled to withstand the drying influence of the winter. Similarly the deciduous kinds of Cherry and Oak have thinner leaves than the evergreen species, such as Cherry Laurel and Portugal Laurel, and Holm-oak. These facts now give us a clue to the stiffness of the foliage of the two broad-leaved evergreen British trees—the Box-tree and Holly.

Thus, in cold-temperate regions, the shedding of foliage is a device largely or exclusively designed to avert the danger of being parched to death. Here the danger arises, not through lack of moisture in the soil, but through the coldness of the latter and the consequent partial or complete inability of the roots to absorb the water that may be abundant. In tropical regions that are characterised by a markedly hot, dry season, the majority of trees shed their leaves, and probably rather with the same general object in view than to avoid the scorching sun. But, in this case, the danger of desiccation arises from the excessive rapidity of evaporation in the dry season, and from the scantiness of the amount of water present in the soil at that season. *Percy Groom, D.Sc.*

(To be continued.)

THE ROSARY.

CULTURAL NOTES FOR AUGUST.

THE Wichuraiana Roses are flowering splendidly. William Allen Richardson Noisette is also in wonderful form, and against a fence or on standards the flowers are very striking. The season on the whole, with the frequent showers, is favourable for budding, and there is nothing to be gained by delaying the completion of this work. The remaining stocks of the seedling and cutting briars can now be dealt with. The Manettii and De la Grifferæ stocks can be left till the last; the buds should be inserted well down under the ground line. All Roses out of flower should be cut back two or three buds, not as I have seen done in some cases, the shoots merely half severed. The pillar and rambler varieties must be tied in as the growths lengthen to prevent them from being damaged by strong wind and autumn gales. I should have remarked before that it is not well to shorten the shoots of briar stock which have been budded, until there is a certainty of the bud having

"taken." If the ties are cutting into the bark, slacken them, as it is too early yet to remove them altogether.

A surface mulch of half-spent manure is invaluable for all Roses in dry, hot weather, as it lessens the need for watering. Now is a good time to increase desirable kinds by layering out-of-doors the shoots of dwarf Roses. The outer, best-matured shoots are the most suitable for the purpose. The soil should be well loosened and some sandy grit, leaf-mould and ballast mixed in at a depth of nearly 1 foot. Cut out a sloping trench 9 inches to 1 foot deep, make an incision 1 inch long half-way through the bottom of the shoot, and press it down carefully against the side of the trench, which will leave half the shoot exposed above ground. Fill in the trench and tread the ground quite firm, then apply a good soaking of water, well mulch the surface soil, and fix each layer upright to a stake to keep it in position.

Dwarf Roses which have been pegged down, should have the old wood cut away when they have ceased to flower, so as to encourage the growth of the long shoots proceeding from the middle of the plant, which furnish the flowering shoots for next year. Keep the ground well stirred with the hoe.

The Tea-scented and China Roses in pots that were forced and have been standing out-of-doors should now be overhauled, with a view to preparing them for removing indoors. Any that were potted in the spring will only require a good top-dressing of turfy loam, decayed manure and bone dust, first removing the uppermost of the old soil. The drainage must be made efficient, and some pieces of charcoal, mixed with the crocks, will keep the soil sweet and the roots healthy. Any plants that require a shift into larger pots should have the old soil shaken from their roots and put into clean pots, using a few knobs of charcoal and 1-inch bones for drainage. The compost may consist of two-thirds fibrous loam, and one third rotten manure, leaf-mould and sharp sand. Pot firmly with a potting stick and place the plants outside until October, when they can be taken into a cool, light house.

If any of the plants are weak and stunted, it is best to return them to pots of the same size; they must not be over-potted. After one thorough good soaking, newly-potted plants should be kept rather drier at the root, but they may be given a light syringing overhead occasionally to assist root action.

Pot Roses which were propagated by grafts and cuttings during autumn and spring and plunged outside are now making splendid growths, and, having been well disbudded, are healthy and vigorous. They will be in grand condition later on for flowering in autumn and winter. J. D. G.

TREES AND SHRUBS.

CYTISUS MONSPESSULANUS.

This is a variety of Broom that is very little known. It is a tall-growing, vigorous plant from the south of Europe, and is harder than might be supposed from its habitat. It will probably be found to succeed anywhere in the southern half of the kingdom, but would hardly be suitable for the midlands and north. Like all the other Brooms, it requires an open, sunny situation and a light, fairly dry soil. The comparatively stout stems are densely hairy and clothed with alternate, nearly sessile, trifoliate leaves, the individual leaflets being rather less than an inch long, and they are covered with short, fine hairs. The stems and leaves become nearly, or quite, glabrous in the second year. The golden-yellow flowers open in May, and are borne on short, axillary stems in clusters of four or five. They are followed by small pods from one inch to two inches long, which ripen freely, and yield plenty of good seeds. The seed germinates readily and is the best and easiest method of propagation.

The species will probably attain a height of 10 feet or so with age, as some four-year-old plants we have at Bagshot have already attained a height of 5 feet.

CYTISUS NIGRICANS.

This is a native of the southern parts of Central Europe, being fairly abundant in Austria. It forms an upright bush from 2 feet to 3 feet in height, with slender, twiggly stems, terminated by upright spikes of yellow flowers in July and August. This Broom blooms at a time when out-door flowers are becoming scarce, and a clump has a fine effect. *C. nigricans* is easily grown, and thrives well in a dry, sunny spot. An annual cutting-back in spring keeps this plant in good condition and also conduces to good flowering. It is easily propagated by seeds, which are produced freely.

GENISTA ÆTHNENSIS.

This species is a native of the slopes of Mount Etna in Sicily. In a young state it is a thin, ungainly-looking plant, but looks at its best and blooms to perfection when it has attained a good height and size. When fully developed, it reaches a height of 12 feet or more, with thin, whip-like, arching or pendulous branches, bearing a few small, scattered leaves. The best place for this Broom is in a mixed shrubbery, where its bare, lower stems are hidden by other subjects, and its bright yellow flowers can be shown up by a dark background in July and August. Propagation should be by seeds.

GENISTA SAGITTALIS.

A DWARF, spreading plant, barely a foot high, and bearing short, terminal spikes of bright yellow flowers in June. The main stems spread horizontally, but the growths spring upright from them, so that the flowers are displayed to the best advantage. The stems are winged, each wing being terminated by an ovate lanceolate leaf rather less than an inch long. The species is essentially one for the rockery, or a dry, sunny bank, which it soon covers if the plants are set out about 2 feet apart. It is easily raised from seed. J. Clark, Bagshot, Surrey.

INTERNATIONAL HORTICULTURAL EXHIBITION, 1912.

THE following particulars have been issued by Mr. R. Hooper Pearson, hon. Press Secretary for the International Horticultural Exhibition, 1912:

The Executive Committee formed for the purpose of organising and holding a great International Horticultural Exhibition in London in the spring of 1912 is composed of the following members:—

Chairman, J. Gurney Fowler, Esq., J.P.; hon. treasurer, Sir Jeremiah Colman, Bart., J.P., V.M.H., and

E. Beckett, V.M.H.,	C. Harman Payne,
E. A. Bowles, M.A.,	R. Hooper Pearson,
W. A. Bilney, J.P.,	Sir Albert K. Rollit,
Wm. Cuthbertson, J.P.,	J.P., LL.D., D.C.L.,
C. R. Fielder,	Litt.D.
John Green,	T. A. H. Rivers,
Jas. Hudson, V.M.H.,	N. N. Sherwood,
F. J. Hanbury,	V.M.H.,
A. G. Jackman,	A. W. Sutton, V.M.H.,
A. Kingsmill,	A. Turner,
Henry B. May,	H. J. Veitch, V.M.H.,
C. G. A. Nix,	R. W. Wallace,
George Paul, V.M.H.,	Rev. W. Wilks, M.A.

The hon. sec. is Mr. Edward White (of Milner, Son & White), 7, Victoria Street, Westminster, S.W.

This committee is now holding frequent meetings and doing everything possible to push forward the necessary arrangements.

Appeals will shortly be distributed setting forth the privileges which the committee proposes to grant to subscribers and guarantors.

The exhibition will be held in May; and will

be open to the public on eight week days. It is proposed that the prices of admission shall vary between two guineas on the opening day, and one shilling on the later days of the exhibition. Although in no way responsible for the exhibition, the Royal Horticultural Society is extending its general approval to the scheme. This Society has not only agreed to forego the holding of the usual Temple Flower Show for that year, but it has also contributed a sum of £1,000 towards the International Exhibition, and in addition is prepared to assist generously in the formation of a guarantee fund.

An ideal site for the exhibition will probably be secured in the south-west of London.

A preliminary schedule will soon be ready for prospective exhibitors, as the Schedule Committee is meeting frequently and sitting long for the purpose of getting out an early edition.

This first edition will not contain the money prizes for each class; its main purpose will be to acquaint exhibitors in England, the Colonies, and foreign countries with the details of the classes included in this, the most embracing schedule of horticultural exhibits ever compiled in this country. The amount of prize money will very far exceed the sum awarded at the International Exhibition of 1866, when £1,600 was expended on prizes.

Arrangements are being made for establishing territorial committees in the counties, and the secretaries of these committees will shortly be appointed.

Already the committee has obtained the highest patronage for the International Show, including their Majesties the King and Queen and their Royal Highnesses the Duke of Connaught, Prince and Princess Christian, Princess Louise and others.

NOTICES OF BOOKS.

THE BOOK OF THE ROSE.*

THE late Rev. Foster-Melliar was a Rosarian of the old school. He grew Roses because he loved them and loved to exhibit them, taking a pride in cups and medals and other prizes that he obtained as a result of his skill in growing these flowers. His book, the first edition of which was published in 1894, was written, as he told us, for enthusiasts, for those who made a regular hobby of Roses, for those who valued the individual flower of the Rose and whose idea was not the Rose for the garden, but the garden for the Rose. He believed that Rose-growing as a hobby was particularly adapted for gentlemen, and especially for country parsons.

But the exhibition qualities of a flower, be it a Rose or a Chrysanthemum, are not often those which gardeners value most; indeed, prize flowers, like prize pigs or prize poultry, are only obtainable as the result of much worry and hard work, to which the art of the dresser has also sometimes to be added. A tray of exhibition Roses is ugly in comparison with a well-flowered Rose bush on a lawn in June or July. For Roses are beautiful summer-flowering shrubs, and we are glad to see that this is now being generally recognised. The garden for the Rose certainly, but let the Rose display its real charms there and not as an individual flower pegged down on a tray.

The fourth edition of Mr. Foster-Melliar's book has been revised by the Rev. F. Page Roberts and Mr. H. E. Molyneux, who inform us in the preface that the book was originally written for the exhibitor, and, whilst they evidently are not in full sympathy with the author, they have thought it best to restrict their alterations and additions to footnotes, except the chapter on "Manners and Customs," and the lists of Roses.

Foster-Melliar loved the hybrid perpetuals because he knew comparatively little of the newer and, in many ways, far superior hybrid Teas. These Roses make the garden gay, not merely for

a week or two, but all the summer through, and often until December and January.

The first chapter of this new edition is a memoir of the author, the rector of Sproughton, in Essex, in which capacity Mr. Foster-Melliar lived and grew his Roses for about 20 years. He died in November, 1904. The remaining chapters are pretty much as they were originally written, and, in looking through them, we were fired by the enthusiasm and filled with admiration for the great practical knowledge displayed by the author. History and Classification; Situation and Soil; Planting; Pruning; Propagation; Exhibiting, and Manners and Customs are each treated upon in the spirit of one who knows his subject and is in love with it. The lists or selections of sorts have been brought up to date by the editors. There is also a calendar of operations in the Rose garden. The illustrations are chiefly from photographs of representative Roses, and the frontispiece is a characteristic portrait of the author, who was, what he there appears to be, one of the most lovable of men. W.

THE BOOK OF THE FLOWER SHOW.*

THOSE who are acquainted with the series of gardening books, of which this is the latest, need not be told that the volumes are not of equal importance. *The Book of the Flower Show*, it may be remarked at once, if not the most important, is at least a notable addition to the list to which it has just been added. In some respects it were to be desired that the author had assumed a more authoritative tone than he has, and had been more definite in some things to which reference will be made later, because a book of this nature, if it is to have the fullest value, must have a precision that admits of no room for doubt on the part of the reader.

Full directions for compiling rules for flower shows, with examples obviously extracted from those of existing horticultural societies, are given, with warnings regarding the shoals that are most likely to wreck or damage the craft once it is launched. Mr. Curtis truly remarks that the moving spirit must always be the secretary, who has it in his power to stimulate enthusiasm for his society, or, on the contrary, to damp every bit of energy its members ever possessed. One could have wished that more had been written regarding the critical part of the subject, the duties of the judges, and also their powers in the matter of disqualifying which are sometimes carried beyond the necessity of the case. But this, perhaps, can best be judged by local circumstances. I have found it conducive to easy working, and at the same time to serve every good purpose, to request the judges to pass without notice any exhibit which clearly fails to conform to rule, or which may verge on the confines of fraud.

A large part of the present volume is occupied with a discussion of the exhibition points of flowers, fruits, and vegetables, with brief hints regarding the kind of thing not to stage. It is here, and particularly in the section devoted to flowers, that the author is less lucid, and too much given to generalise than the case demands. Definitions such as "good," "full," "large size," "great depth," and "shapely flowers" occur, and though, in a general way, people who are acquainted with the flowers to which these expressions refer may not go far astray in seeking for their meaning, it is obvious that they give no indication whatever of what is essential in the flowers. What, for instance, is "good size" in a China Aster or "great depth" in a quilled Aster! I should have liked, too, when the question of dressing flowers was approached, that it should have been squarely met. One cannot imagine a cultivator of scarcely any kind of garden-produce for exhibition who does not in some way or other manipulate it so as to make

it look more attractive than it would be were it left alone. It is possible to rebel against the superlative ordering of the petals of a Carnation by an accomplished master of the art of flower-dressing without deprecating the removal of petals which are disfiguring to a bloom; to be horrified by the taste that calmly produces a nicely formed African Marigold by the aid of a pair of scissors, without feeling qualms if the same flowers are rendered smooth by the extraction of aborted and misplaced florets. One might go a step further and remark that every cultivator "dresses" the object of his daily attention. The difficulty with the exhibitor is to find the point where legitimate dressing passes into that against which the ordinary mind recoils.

Mr. Curtis entertains very strong views on labelling—too strong, I should venture to assert, when its incompleteness would affect the results in judging. One can understand and sympathise with the spirit of a rule that would penalise by the reduction of prize money slackness in labelling, but that it should affect the proper placing of the produce on its merits would be absurd. In village shows, it is too much even to expect



FIG. 28. HYMENOCALLIS HARRISIANA
FLOWERING IN CAMBRIDGE BOTANIC
GARDEN.

labelling, at least at the present stage of exhibiting.

Those interested will find in Mr. Curtis's book many hints and much information regarding everything connected with the subject of which it treats. It is illustrated, but not effectively. R. P. Brotherton.

HYMENOCALLIS HARRISIANA.

THE illustration in fig. 28 represents a distinct species of *Hymenocallis*, and the only one I know that can be grown out-of-doors in a border. In the Cambridge Botanic Garden, where the photograph was taken, it has been an ornamental plant for some years past, growing in a narrow border in one of the recesses between the houses. It forms a close tuft, and flowers early in July. The bulbs are globose, about $1\frac{1}{2}$ inches in diameter; the leaves are oblanceolate, narrowing to the base but not petiolate, 2 feet long and about $2\frac{1}{2}$ inches broad; the scape is about as long as the leaves, and bears an umbel of from 2-8 flowers, with two or three large, scarious spathe valves; the perianth tube is about 3 inches long, and is green for about $\frac{3}{4}$ inch of that length, then shading off to white; the segments are linear about 3 inches long; the staminal cup is funnel-shaped, comparatively small, $\frac{1}{2}$ inch long, very plicate, about 3 inches in diameter at the throat, and with a small tooth between the filaments; the filaments are $1\frac{1}{2}$ inches

long; the anthers slender and versatile, about $\frac{1}{2}$ inch long.

The species is a native of Mexico, and I have two forms, one with a perfectly green leaf and the other with a leaf distinctly glaucous. The flowers are very ornamental when cut. The species is figured in *Botanical Magazine*, 1881, tab. 6562, from specimens received from Colonel Trevor Clarke and Mr. Elwes, but it was originally described by Dean Herbert from specimens imported about the year 1840 by T. Harris, of Kingsbury, after whom it was named. R. Irwin Lynch.

THE NEW LAND VALUATION.

THE preliminary steps for the official valuation of all land, as directed by the Finance Act, 1910, are now practically completed, and on August 1 forms will be sent out containing a list of questions which have to be answered by every person owning a piece of land however small. It is understood that no fewer than $3\frac{1}{2}$ million forms have been printed, and owners of land have to return their forms duly filled in within 30 days, under a penalty of £50. Replying to a question upon this subject recently, the Chancellor of the Exchequer stated that he did not anticipate that the officials would strictly enforce the penalties in the case of those persons who might be away for their summer holiday during the month of August; but no actual pledge was given, and it would therefore be unwise to rely too confidently upon the indulgence of the Somerset House authorities.

UNIVERSAL VALUATION.

It does not appear to be fully understood by the general public that every piece of land is to be officially valued (as on April 30, 1909), irrespective of whether or not it may be exempt for the moment either from Increment Value Duty or Undeveloped Land Duty, or both these burdens: such is, nevertheless, the case. The effect of this valuation may be very far-reaching, and, for this reason, great caution should be exercised in filling up the details required by the valuation forms. Practically, it will be necessary to deal with each individual case on its merits, the peculiarities of the Act being such as to render it impossible to lay down any fixed rules for general guidance.

SOME CONSIDERATIONS.

For instance, Increment Duty may be chargeable in respect of a piece of land, even though no claim for Undeveloped Land Duty arises. In such a case, the first impulse of the owner will probably be to press for as high a valuation as possible, so that, if the land should rise in value at some future date, the State's share of one-fifth of any such future increase may be kept down to the lowest possible figure. It does not necessarily follow, however, that such a course would ultimately prove advantageous to the owner, because, in the first place, the official valuation will probably prove the basis upon which the Death Duties are estimated (in addition to Increment Duty) in the event of the owner's death. Furthermore, it is understood that next year a strong effort will be made to levy all local rates on the capital value of the land instead of upon the annual value of the premises as hitherto, and a private Bill for this purpose, which may be officially adopted, has already been brought before Parliament.

An owner who is advanced in years might, therefore, consider it wise to run the risk of paying a large Increment Duty and to press for the valuation to be kept as low as possible, so that, in the event of his death, the burden of Death Duties might not bear too heavily upon his wife and children. Even, however, if he adopted that course he would still find himself confronted with the possibility of serious danger, as the Chancellor of the Exchequer has already suggested that the official land valuation might ultimately be made the basis of the price to be paid either by the State or by local authorities if they should require to purchase the land for the purposes of the community, or if the State should wish to buy up the land for the purpose of recreating rural industries. It will be obvious,

**The Book of the Flower Show*. By Charles H. Curtis. (London: John Lane.) *Handbooks of Practical Gardening*. Edited by Harry Roberts. Price 2s. 6d. net.

therefore, that those who have invested their savings in a piece of land, however small, cannot afford to answer with indifference the official questions which are about to be put to them.

A trader who carries on business as a limited company will be confronted with a somewhat different problem from that which faces a private individual. He will not be faced with the difficulty arising in connection with the Death Duties, as his Will would deal with shares in a limited company, and not with an "interest in land" within the meaning of the Act. He would, however, have to bear in mind that, in the year 1914, and in every subsequent 15th year, the land owned by his company will be valued afresh, and, in most instances, the State will claim one-fifth of any increase in value of the land since April 30, 1909, less the usual margin of 10 per cent. to cover expenses, possible fluctuations in price, &c. This, of course, is in addition to the universal valuation of "undeveloped land" to be made every five years.

A fresh set of considerations arises where the land is used for the purpose of agriculture or horticulture, especially if the land has any additional value by reason of its being either wholly or partially ripe for building purposes. In the case of horticultural land, a claim for Undeveloped Land Duty will usually arise, and, looking at the matter from this point of view, it might be wise to keep the official valuation as low as possible, having regard to the fact that the duty starts as from April 30, 1909, at one halfpenny in the pound on the capital or selling value of the land, and that this duty is not only payable every year, but will probably be increased in the near future. Here again, however, the owner of the land is confronted with the danger of having to pay a larger amount by way of Increment Duty, coupled with the additional risk of having his land taken from him compulsorily, either by the State or the local authority, at the low valuation in question. If the land is likely to be used for building in the near future, it will usually be wise to press for a high original valuation, as it will be cheaper to pay annually a tax of a halfpenny in the pound on the selling value of the land for a few years, rather than to pay 4s. in the pound on the increased value which will result from the land changing hands at building price.

SOME COMPLICATIONS.

Bearing in mind the above few examples of some of the factors to be considered, it will be seen that, even in the simplest cases, the official valuation forms will need careful study; but, in most instances, the question is likely to be complicated still further by other considerations. For instance, a nursery (or even a private garden) which has a frontage to a main road may, as regards the front portion at least, be almost worthless for the purpose of either horticulture or private enjoyment, owing to the excessive dust raised by passing traffic, or the application to the roads of special preparations, which, although very welcome to owners of motor-cars, are injurious to plant life. On the other hand, as the frontage to the road decreases in value for horticultural purposes, it may proportionately increase in value for building purposes, resulting in considerable liability for Increment Duty. It should, therefore, be borne in mind that an owner is entitled to demand that any portion of the land shall be separately valued. In some cases it may pay an owner to demand that the strip of land fronting the roadway shall be valued separately from the land in the rear, on the ground, for instance, that only a portion of the land is worth more for building purposes (or for the purpose of any other trade or business) than it is for agriculture or horticulture. Conversely, however, cases may arise where it would be unwise for an owner to split up the more valuable portions of his land from the less valuable, and where it would pay him better to demand that the land be valued as a whole, so that the increased value attributable to his building frontage may be spread over the whole of his holding. The result of this would be that the land at the rear would help to bear a proportion of the increasing value of the land at the front of the premises.

It will also have to be borne in mind that, although the valuation of the land is to be made now, the value which will be officially taken is not the value at the present moment, but the value as it stood over a year ago, namely, on

April 30, 1909, before the loss of confidence in the property market had arisen, and before a possible purchaser, in estimating the price to offer for a piece of land, would have had an opportunity of deducting from the amount of his offer the capitalised value of the increased taxation which he will have to bear in the future. Furthermore, if the land has been bought within the preceding 20 years at a higher price than its value on April 30, 1909, then that previous value will be substituted for the more recent value.

It may be suggested that, after all, the simplest plan will be for the owner to press for the true present value of the land to be estimated as nearly as possible, but, apart from the fact that every person is entitled to take every possible point in his favour which the law permits, and that any error may inflict irremediable loss in the near future, owners will find a very real difficulty in forming any idea of what the true present value may be. Be it remembered that, for the purpose of the pending valuation, all houses and buildings, and all fruit trees, fruit bushes, and growing produce are to be treated as if they were non-existent, and the cost of their assumed removal will be estimated. Various calculations have also to be made with regard to burdens in respect of tithe, improvement rate and other outgoings, the cost of making roads or sewers on the property, and capital expenditure made for the purposes of any business other than agriculture or horticulture, and so on. In addition, there is the difficulty that many clauses in the Act are admittedly ambiguous, and the Chancellor of the Exchequer has already declined to express an opinion upon certain questions of construction, on the ground that these will have to be decided by the courts of law. Until, therefore, these doubts have been removed by judicial decisions, it is impossible for an owner to foretell in what way he will be affected by some of the provisions of the Act.

GLASSHOUSES.

In this connection, it may be well to point out that, although liable for Increment Duty, land which is developed by building will not be chargeable with Undeveloped Land Duty. The Act says that, for this purpose, glasshouses are to be treated as buildings. Does this mean that only the few yards on which a greenhouse stands are to be treated as exempt, or is it intended that, if a reasonable number of greenhouses are in existence, then the whole nursery is to be exempt? If so, what is to be the minimum proportion of uncovered land? During the progress of the Bill in Parliament it was suggested in some quarters that, if one-fifth of the land were covered with glass, no claim for Undeveloped Land Duty should arise; but no such provision was inserted in the Act, and, apparently, the question will have to be fought out in the law courts.

THE VALUATION FORMS.

It should be carefully observed that the official valuation form is divided into two portions. The writer has already had an opportunity of seeing these forms, and it will be found that Part 1 contains a list of questions which the owner of the land is bound to answer; whereas Part 2 asks for additional particulars, which need not be furnished unless the owner desires to give them. The question marked "U," for instance, invites the owner to estimate the gross value, the full site value, the total value, and the assessable site value of his land. Having regard to the possibility of their answers being used against them in the future, most owners will probably consider it wiser to refrain from expressing any opinion in reply to the optional questions, especially as they would be called upon to give full particulars showing how the estimate has been arrived at. If the owner refrains from giving an estimate, his course will then be to await the provisional valuation, after which he will have 60 days in which to check and protest against the assessment if he thinks it desirable to do so in his own interests. The question marked "V," however, is one to which the owner must be careful to insert the answer "Yes," as this refers to his right to claim certain deductions from the estimated site value of his land. In this connection it should be borne in mind that delicate questions of calculation arise, as the value of the land, after stripping it (in imagination) of all timber, trees, and other growing produce, has to be taken into account,

and the cost of so stripping it has also to be estimated. These deductions may help considerably to reduce the amount of Undeveloped Land Duty payable. Furthermore, if deductions are now claimed now for the purpose of Increment Value Duty, they cannot afterwards be claimed when a demand for the duty arises in the future. At first sight it would look as though these deductions represent a common factor which, in the latter instance, it would, therefore, be immaterial to ignore; but this is not the case. For instance, a sum of, say, £50 might be deducted from the present value on account of capital expenditure in various directions; but it does not follow that, when a claim for duty arises in the future, the precise sum of £50 will again be deducted from the valuation. The owner will be entitled to deduct at the future date not merely the £50 in question, but all increase in value attributable to his original expenditure of £50, and, in years to come, the increased value of the land attributable to the original outlay of £50 might amount to £200, and so on in proportion.

POINTS SUMMED UP.

Summing up the position generally, it will be seen that the principal points to observe are as follow:—

First, in the case of a *high* initial valuation, there is the danger of—

(a) High Death Duties.

(b) High rates and taxes, if rating on capital site value is adopted hereafter.

(c) High Undeveloped Land Duty.

On the other hand, the risk of heavy Increment Duty is diminished.

Secondly, in the case of a *low* valuation, there is the danger of—

(a) High Increment Duty.

(b) Compulsory purchase for public purposes at under-value.

On the other hand, the claims in respect of Undeveloped Land Duty and Death Duties are diminished.

The principal points to be considered are:—(a) The age of the owner. (b) The possibility of sale or lease of the land for more than 14 years at an early date. (c) The present and future building value. (d) The present and future horticultural value. (e) The question of present exemption under the Act from either Increment Duty or Undeveloped Land Duty, the exemption in the case of these two burdens being by no means identical.

It is feared that the few points raised for consideration above are highly technical, and may prove wearisome reading; but perhaps enough has been said to warn those upon whom official valuation forms may be served of the extreme danger of committing themselves, without due care and consideration, to a present valuation of their property which will bind them for all time, and any error in which may prove seriously detrimental to them or their children in years to come.
H. M. V.

PLANT NOTES.

KALANCHOE FLAMMEA.

SINCE this species was introduced several hybrid forms have been raised, but they do not, as decorative plants, equal *K. flammea* itself. There can be no question that it is one of the finest plants of the last decade, and the numbers in which it is now to be met with well attest its present-day popularity. The comparatively simple cultural requirements of this *Kalanchoe*, combined with the uncommon, yet effective tint of its brightly-coloured blossoms, the length of time they remain fresh, and the succession which is kept up, are all points in its favour. In referring to it as one of the plants of the last decade, I have not overlooked the fact that it first flowered at Kew in 1897, from seed sent two years previously, but it was not till the year 1900 that Messrs. Veitch, into whose hands the stock passed first, distributed seed of it. Considering the vast expanse in Africa that has been opened up within the last few years, the really good plants obtained therefrom have not been numerous. *Kalanchoe flammea* *Coleus thyrsoideus* are perhaps the best of them. W.

REPORT ON THE CONDITION OF THE OUT-DOOR FRUIT CROPS.

[FROM OUR OWN CORRESPONDENTS.]

THE WORDS "AVERAGE," "OVER," OR "UNDER," AS THE CASE MAY BE, INDICATE THE AMOUNT OF THE CROP;
AND "GOOD," "VERY GOOD," OR "BAD," DENOTE THE QUALITY.

FULLER COMMENTS WILL BE GIVEN IN THE FOLLOWING NUMBERS. SEE ALSO LEADING ARTICLES ON PAGES 52.

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NEC- TARINES.	APRICOTS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
SCOTLAND.										
0. Scotland, N.										
CAITHNESS	Average; good	Average	.....	Under; bad	.....	.....	Over; very good	Average; very good	.....	W. F. Mackenzie, Thurso Castle Gardens, Caithness.
ELGIN	Under; good	Under; good	Average; good	Average; good	Under; good	Under; good	Over; very good	Average; good	.....	John Macpherson, Mayne Gar- dens, Elgin.
MORAYSHIRE	Under	Under	Under	Average	Under	Under	Average; very good	Average; very good	.....	William Ogg, Duffus House Gardens, Elgin.
	Under	Under	Average	Under	.....	Average	Under	Over; very good	.....	D. Cunningham, Darnaway Castle Gardens, Forres.
ORKNEYS	Under; good	Under; good	.....	Average; very good	Over; very good	.....	Over; very good	Average; good	.....	William Liddell, Balfour Castle Gardens, via Kirk- wall
SUTHERLANDSHIRE	Under	Under	Under	Under	.....	.....	Average	Average	Average	D. Melville, Dunrobin Castle Gardens, Golspie.
	Under; bad	Under; bad	Under; bad	Under	.....	.....	Over; very good	Over; very good	.....	John McIver, Skibo Castle Gar- dens, Dornoch.
1. Scotland, E.										
ABERDEENSHIRE	Under; bad	Under; bad	Under; bad	Under; bad	.....	.....	Under; good	Average; good	.....	James Grant, Rothenorman Gardens.
	Under; very bad	Under; bad	Under	Under	.....	.....	Under	Average	.....	Simon Campbell, Fyvie Castle Gardens, Fyvie.
	Under	Under	Under	Under	.....	.....	Average	Average; good	.....	John M. Troup, Balmoral Castle Gardens, Ballater.
BANFFSHIRE	Under; very good	Under	Under; good	Under; bad	Average; good	Average; very good	Average; good	Average; good	.....	Chas. Webster, Gordon Castle Gardens, Fochabers.
	Under	Under	Average; good	Under	.....	.....	Average; good	Average; good	.....	Geo. Edwards, Ballindalloch Castle Gardens, Ballindal- loch.
BERWICKSHIRE	Under; bad	.....	Under; good	Average; good	.....	Under; bad	Over; good	Average; bad	.....	James R. Redpath, Duns Castle Gardens, Duns.
	Under	Under	Under	Average; good	.....	.....	Average; good	Average; good	.....	Robert Stuart, Thriestane Castle Gardens, Lauder.
CLACKMANNAN- SHIRE	Under	Under; bad	Under; bad	Under	.....	.....	Average	Average; good	.....	James Small, Norwood Gardens, Alloa, N.B.
	Under	Under	Average	Average	Under	Under	Average	Under	.....	A. Kirk, Consulting Gardener Alloa.
EAST LOTHIAN	Under; good	Under; good	Under; good	Under	Average; good	Average; good	Under	Under; bad	.....	R. P. Brotherston, Tynning- hame Gardens, Prestonkirk.
FIFESHIRE	Average; good	Under	Under	Under	.....	Under	Over	Under	.....	Chas. Simpson, Wemyss Castle Gardens, E. Wemyss.
FORFARSHIRE	Under	Under	Under	Average; good	.....	.....	Average; good	Under; good	.....	William Alison, Seaview Gardens, Monifeth.
KINCARDINESHIRE	Under	Under	Under	Under	Under	.....	Average; good	Average; very good	.....	John M. Brown, Blackhall Castle Gardens, Banchory.
	Under	Under	Under	Under	Not grown outside	.....	Average	Average	.....	William Knight, Fasque Gar- dens, Laurencekirk.
MIDLOTHIAN	Average	Under	Average	Under	Average	Average	Over; good	Average	.....	Wm. G. Pirie, Dalhousie Castle Gardens, Bonnyrigg.
	Under	Under	Under	Under	Under	Under	Over	Average	Under	James Whyte, Dalkeith Gardens, Dalkeith.
PEEBLES SHIRE	Under	Under	Under	Under	.....	.....	Average	Under; bad	.....	Wm. McDonald, Cardrona, Traquair, Innerleithen.
	Average	Under	Average	Under	.....	.....	Over; good	Average; good	.....	George Haig, Garvald House Gardens, Dalhousie.
PERTHSHIRE	Under; good	Under; good	Average good	Average good	Average; good	Under; good	Average; good	Over; good	.....	J. Farquharson, Kinfauns Castle Gardens, Perth.
	Under; bad	Under; bad	Under; good	Under; good	.....	Under; good	Average; very good	Under; good	.....	Thomas Lunt, Keir Gardens, Dunblane.
	Average	Under	Average (Victoria extra fine)	Average	.....	.....	Average; good	Average; good	Average; good	John Robb, Catherine Bank, Milnab Terrace, Crieff.
6. Scotland, W.										
ARGYLLSHIRE	Under; good	Under; good	Under; good	Under; good	Under; good	.....	Average; good	Over; very good	.....	D. S. Melville, Poltalloch Gardens, Lochgilphead.
	Over	Average	Under	Average	.....	.....	Average	Over; good	Average	Henry Scott, Torloisk Gar- dens, Aros, Isle of Mull.
AYRSHIRE	Under; bad	Under; bad	Average; good	Average; bad	.....	.....	Average; good	Average; good	.....	William Priest, Leighton Gar- dens, Kilwinning.
	Average	Under	Under	Under	.....	.....	Over	Average	.....	John McInnes, Kirkmichael Gardens, Kirkmichael, by Maybole.
BUTESHIRE	Under; very good	Average; good	Average; very good	Average; good	Average; very good	Under; very good	Average; very good	Average; good	Average; good	D. Buchanan, Bargany Gar- dens, Dailly.
	Under	Under	Under	Under	Average	.....	Average; good	Average	.....	M. Heron, Mount Stewart Gardens, Rothesay.
DUMBARTONSHIRE	Average; good	Under; bad	Under	Average	Average	.....	Over; good	Over; good	.....	D. Stewart, Knockderry Castle Gardens, Cove.
DUMFRIES SHIRE	Average	.....	Under	Average	.....	Under	Average	Average	.....	John Urquhart, Hoddum Castle Gdns., Ecclefechan.
	Under; good	Under; good	Over; good	Under	.....	.....	Average; good	Over; good	.....	James MacDonald, Dryfeholm Gardens, Lockerbie.
RENFREWSHIRE	Under	Under	Under	Under	.....	.....	Average	Average; good	.....	Peter Brown, Ardgowan Gar- dens, Inverkip.
WIGTONSHIRE	Average; good	Over; good	Over; good	Average; good	.....	.....	Over; very good	Average; good	.....	John Bryden, Dunragit Gar- dens, Dunragit.
ENGLAND:										
2. England, N.E.										
YORKSHIRE	Under; bad	Under; bad	Under; bad	Under; good	Under	Under	Average; good	Average; very good	Under	F. Jordan, Warter Priory Gardens, York.
	Under	Under	Under	Average	.....	Under	Average; good	Over; bad	.....	J. G. Wilson, Chevet Park Gardens, Wakefield.
	Under	Under	Under	Under; bad	Under	Under	Average; good	Average; very good	Under	W. Jackson, Dalton Hall Gardens, Dalton Holme, Beverley.
	Under; good	Under; good	Average; good	Average; good	Average; good	Under; bad	Over; very good	Over; very good	Under; bad	Jas. E. Hathaway, Baldersby Park Gardens, Thirsk.
	Under	Under; bad	Under	Average	Average; good	Average	Average; good	Average; good	Under	Geo. P. Bound, Grimston Park Gardens, Tadcaster.
	Under; bad	Under; bad	Average	Average	Under	Under	Average	Average; good	Under	V. E. Sutton, Castle Howard Gardens, Welburn.

CONDITION OF THE FRUIT CROPS—(continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NEC- TARINES.	APRICOTS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
3, England, E.										
CAMBRIDGESHIRE.	Under	Under	Under	Under; good	Average	Under	Under; good	Over; good	Under	T. W. Birkinshaw, Hatley Park Gardens, Gamlingay.
	Under	Under	Under	Average; good	Over	Under	Average; good	Over; very good	Under	W. J. Snell, Wimpole Hall Gardens, Nr. Royston.
	Under; good	Average; good	Under; good	Under; good	Average	Under	Average; good	Over; good	Average	B. Goodacre, Moulton Paddocks Gardens, Newmarket.
ESSEX	Under; good	Under; good	Under; good	Under; good	Average; good	Under	Average; good	Average; bad	Under	A. Bullock, Copped Hall Gardens, Epping.
	Under	Under	Under	Under	Average	Average	Under	Over	.....	Henry Lister, Easton Lodge Gardens, Dunmow.
	Under; bad	Under; bad	Under; bad	Under; bad	Average; good	Under; bad	Average; good	Average; good	Under	W. Johnson, Stansted Hall Gardens, Stansted.
	Under	Under	Under	Under	Average	Average	Average	Average; bad	Average	H. W. Ward, Lime House Nurseries, Rayleigh.
LINCOLNSHIRE	Under; bad	Under	Under	Under; bad	Average	Under	Average	Over	.....	H. Vinden, Harlaxton Manor Gardens, Grantham.
	Under; good	Under; good	Under; bad	Under; bad	Average; good	Average; good	Average; good	Over; good	Under; Walnuts good	John Hope, Rauceby Hall Gardens, Grantham.
	Under; bad	Under; bad	Under; bad	Under; bad	Over; very good	Average; good	Under; good	Average; good	Average; good	F. J. Fleming, Weelsby Old Hall Gardens, Grimsby.
	Under	Under	Under	Average	Average	Under	Over; good	Average	Average	F. Barton, Hainton Hall Gardens.
	Under; good	Under; good	Under; good	Under; good	Under	Under; good	Under	Average; very good	Under	H. Louth, Boothby Hall Gardens, Grantham.
NORFOLK	Under	Under	Under	Under	Under	Under	Average	Over	Under	J. Wynn, Sedgeford Hall Gardens, King's Lynn.
	Under; bad	Under; good	Under; good	Under; bad	Under; good	Under; good	Average; good	Over; very good	Average; good	Lewis Smith, Shotesham Park Gardens, Norwich.
	Average	.....	.....	Under	.....	.....	Average	Over	.....	J. W. Bradbrook, Ketteringham Park Gardens, Wyndham.
	Under	Under	Under	Under	Under	Under	Under	Over; good	.....	W. N. Thurston, Witton Park Gardens, North Walsham.
SUFFOLK	Under; good	Average; good	Average; good	Average; good	Average; good	Under; bad	Average; good	Over; very good	Average	Thos. Simpson, Henham Gardens, Wangford.
	Over; very good	Under	Under	Under	Under	Under	Average	Average	Under	Alfred Andrews, High House Gardens, Campsea Ashe, Wickham Market.
	Under; bad	Under	Under	Under	Under	Average	Over	Over	Under	W. Messenger, Woolverstone Gardens, Ipswich.
4, Midland Counties.										
BEDFORDSHIRE	Under	Under	Average	Under	Under	Under	Average; good	Over; very good	.....	F. J. Foster, Cranfield Court Gardens, Woburn Sands.
	Under; good	Under	Under; bad	Average	Under; good	Under	Average	Over; very good	Under	A. Carlisle, Henlow Grange Gardens, Biggleswade.
	Average; good	Average	Under	Average	Average; good	Average; good	Average; good	Over; good	.....	C. J. Elliott, Chicksands Priory Gardens, Shefford.
	Under; bad	Under; bad	Under; bad	Under; bad	Under; bad	Under; bad	Average; good	Over; good	Average	H. W. Nutt, Amptill Road, Flitwick.
	Under	Under; good	Under; good	Under	Average; good	Average; good	R. and W. Currants Average; B. Currants and Gooseberries under	Average; good	Under	George Mackinlay, Wrest Park Gardens, Amptill.
	Under	Under; bad	Under	Under	Average	Under; bad	Average; good	Average; good	Under	Wm. F. Palmer, Froxfield Gardens, Woburn.
BUCKINGHAMSHIRE	Under; bad	Under; bad	Under; bad	Average; good	Average; good	Under; bad	Under; good	Average; good	Under	James Wood, Hedsor Park Gardens, Bourne End.
	Under	Under	.....	.....	Average	Under	Average	Average	.....	James MacGregor, Mentmore Gardens, Leighton Buzzard.
	.....	.....	Under	Under	Under	Under	Under	Over; good	Average	W. Hedley Warren, Aston Clinton Gardens, Tring.
	Under; good	Under	Under	Under	Average; good	Under	Under	Average	Under	Chas. Page, Dropmore Gardens, Maidenhead.
	Under	Under	Under	Under	.....	.....	Average	Under	.....	Peter Wilkinson, Walton Lea Gardens, near Warrington.
CHESHIRE	Under; bad	Average; good	Average; good	Under	Under	Average; good	Average; good	Average; good	.....	Charles Flack, Cholmondeley Castle Gardens, Malpas.
	Under	Under	Average	Average	.....	.....	Over; good	Over; very good	.....	W. E. Wright, Alderley Park Gardens, Chelford.
	Under	Under	Average	Under	.....	.....	Average; good	Average	.....	W. H. Goodman, Shipley Hall Gardens, Derby.
DERBYSHIRE	Under	Under	Under	Under	.....	.....	Average; good	Average; good	.....	Bailey Wadds, 181, Uttometer New Road, Derby.
	Average	Under	Average	Average	Not grown outside	Average	Average; excepting B. Currants	Average; good	Under	T. Keetley, Darley Abbey Gardens, Derby.
	Under; bad	Under; bad	Under; bad	Under	.....	.....	Average	Over	.....	F. Jennings, Chatsworth Gardens, Chesterfield.
	Under; good	Under; bad	Average; good	Under; bad	None outside	Under; bad	Average; good	Average; very good	.....	James Tully, Osmaston Manor Gardens, Derby.
HERTFORDSHIRE	Under; good	Under; good	Under; good	.....	.....	.....	Under; very good	Average; very good	Under	Thos. Rivers and Son, Sawbridgeworth.
	Under	Under	Under	Average	Average	Average	Average; good	Over; very good	Average	C. E. Martin, The Hoo Gardens, Welwyn.
	Under; good	Under; good	Under	Under; good	Under; good	.....	Average; very good	Average; very good	Under	H. Prime, Hatfield House Gardens, Hatfield.
	Under	Average	Under	Under	Average; good	Under	Average; good	Over; good	Under	Geo. Kelf, Danesbury Gardens, Welwyn.
	Under	Under; very bad	Under	Average	Average; good	Average; good	Under	Over; good	Average	Edwin Beckett, Aldenham House Gardens, Elstree.
	Under; bad	Under	Under; bad	Under	Under; bad	Under; bad	Average; good	Over; good	Under	Wm. Whitelaw, Batchwood Gardens, St. Albans.
LEICESTERSHIRE	Under; good	Under; good	Under; good	Morellos Under; bad	Under; good	Under; bad	Average; good	Average; good	Walnuts Under	Daniel Roberts, The Gardens, Prestwold Hall, Loughborough.
	Under; very good	Average; very good	Under; good	Under; good	Average; very good	Under; good	Under; very good	Over; very good	Under; bad	W. H. Divers, Belvoir Castle Gardens, Grantham.
	Under	Under	.....	.....	.....	.....	Average; good	Under	.....	W. Wadsworth, Barkley Lane Nurseries, Queensborough.
	Under; good	Under; good	Under; good	Under	Under; good	Under; good	Average; good	Average; good	Under	F. Ibbotson, Rolleston Hall Gardens, Leicester.
	Average	Under	Under	Under	Under	Under	Under	Over	Under	John Harrison, Overdale, Aylestone.
NORTHAMPTONSHIRE	Under; good	Under; good	Under; good	Average; good	.....	Under; good	Under; good	Average; good	.....	R. Johnston, Wakefield Lodge Gardens, Stony Stratford.
	Under	Under	Under	Average	Under	Under	Over	Over	Under	Thos. Masters, Estate Office, Shuckburgh, Daventry.
	Under; bad	Under; good	Under; bad	Average; good	Average; good	Average; very good	Under; good	Average; good	Under; bad	A. R. Searle, Castle Ashby Gardens, Northampton.

CONDITION OF THE FRUIT CROPS—(continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NEC- TARINES.	APRICOTS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
4. Midland Counties.										
NOTTINGHAM- SHIRE	Under; good Average; good Under	Under; good Under Under	Under; good Under Under	Under; bad Over; very good Under	Under; good Average; very good Under	Average; good Average; very good Under	Average; good Average Under	Average; very good Over; very good Over; very good	Average; good Under	Amos Parr, Holme Pictrepant Hall Gardens, Nottingham. James E. Allan, Osberton Gardens, Worksop. J. R. Paterson and Sons, Lowdham. A. W. Culloch, Newstead Abbey Gardens.
OXFORDSHIRE	Under; good Under	Under; good Under	..... Under	Under; bad Average	Average; good Under	Under Under	Under; good Over	Average; very good Over	..... .....	John A. Hall, Shiplake Court Gardens, Henley-on-Thames. A. J. Long, Wyfold Court Gardens, near Reading. F. W. Pearce, Fyasham Hall Gardens, Witney, Oxon. A. W. Perry, Middleton Park, Bicester.
SHROPSHIRE	Under; good	Under; very good	Under; very good	Under; bad	Average; good	Under; good	Over; very good	Over; very good	Average; good	Alex. Haggart, Moor Park Gardens, Ludlow.
STAFFORDSHIRE	Average Under	Under Under	Under Under	Average; good Under	Under; bad Under	Under; bad	Average; good Average	Average; good Average	Under; bad	Edwin Gilman, Ingestre Gardens, Stafford. A. Cheney, Shenstone Court Gardens, Lichfield.
WARWICKSHIRE	Under; bad Average; good Under Under	Under; bad Under; good Under	Average; good Under; bad Under	Average; bad Average Under	..... ..... Under	Under; bad Average; good Under	Average; very good Average; good Average; very good Average	Over; very good Over; very good Average; very good Over; good	Under; bad Under Under	T. Bannerman, Blithfield Gardens, Rugby. H. Under, Rodeston Hall Gardens, Burton-on-Trent. Chas. Harding, Ragley Hall Gardens. Jno. Masterson, Weston House Gardens, Shipston-on-Stour.
5. Southern Counties.										
BERKSHIRE	Average; good Under; bad Under	Over; very good Under Under	Under Under Under	Morellos good; Sweet Cherries bad Average; good Under	..... Over; very good Average	..... Over; very good Average	Over; very good Average Average	Over; very good Over Average	..... Under Under	F. Capp, Charters Gardens, Ascot. A. MacKellar, Royal Gardens, Windsor. J. H. Ward, Benham Park Gardens, Newbury. William Fyfe, Lockinge Gardens, Wantage.
DORSETSHIRE	Average; good Under	Under; bad Under; bad	Under; very good Under	Under; good Under	..... Under	..... Under	Average; good Under	Average; good Average	Under; bad Under	Edward Freed, East Hendred, Steventon. T. Turton, Castle Gardens, Sherborne.
HAMPSHIRE	Average; good Under; good Under	Average; good Under; good Under	Under Under; good Under	Under; except Morellos Average; good Under	..... Average; good Under	Under	Average; good Over; very good Average	Average; good Over; very good Under	Under	Thos. Denny, Down House Gardens, Blandford. Frank Oliver, Minterne, Dorset. R. Coles, Holme Priory Gardens, Wareham.
KENT	Under; good Average; good Under Under Under Under; good	Under; bad Under Under Under Under	Under Under Under; good Under; good	Under; bad Under Under; good Under; bad	Under; good Under Under; very good .....	..... Under Under; good	Over; very good Average; very good Under Over; very good Average; good	Over; very good Over; very good Under Over; very good Under; bad	Under; bad Under; good Under	A. J. Rogers, Langton Gardens, Blandford. Edwin Molyneux, Swanmore Park, Bishop's Waltham. A. G. Nichols, Strathfield-saye Gdns., Mortimer, R.S.O. R. Learmouth, Sherfield Manor, Basingstoke. Henry Martin, F.R.H.S., Bartley Lodge Gardens, Cadnam, Southampton. E. J. Henderson, The Garden, Stratton Park, Micheldever. R. G. Onslow, Dogmersfield Park, Winchester. A. W. Blake, The Castle Gardens, Highclere, Newbury. C. H. Dredge, Chilworth Manor Gardens, Rousey. Correspondent, Ashe Park Gardens, Otterton. A. G. Shadbolt, Blackmore Gardens, West Tisiss.
MIDDLESEX	Average; good Under Average; good Under Under Under	Under Under Under Under	Under Under Under Under	Under; bad Under Under	Under Under Over; very good	..... ..... ..... Under	Average Under Average Average	Average; good Over; very good Average; good Over; very good	Under; good Under Under; very bad	George Woodward, Barham Court Gardens, Maidstone. George Bunyard, Royal Nurseries, Maidstone. Wm. Lewis, East Sutton Park Gardens, Maidstone. Geo. Fennell, Bowden Gardens, Tonbridge. George Lockyer, Mereworth, near Maidstone. John Thos. Shann, Bettshanger Park Gardens, Eastry, near Dover. Charles E. Shea, The Elms, Foots Cray. J. G. Weston, Eastwell Park Gardens, Ashford.
SURREY	Under Under Under	Under Under	Under Under Under	Under Average	Under Under .....	..... Under	Average Under Average	Average Over; good Average	Under Average	H. Markham, Wrotham Park Gardens, Barnet. W. Poupart, Marsh Farm, Twickenham. W. Bates, Cross Deep Gardens, Twickenham. James Hawkes, Osterley Park Gardens, Isleworth. S. T. Wright, R.H.S. Gardens, W. Sney Ripleys. Geo. Kent, Norbury Park Gardens, Dorking. Geo. Halsey, Riddings Court Gardens, Caterham Valley.

CONDITION OF THE FRUIT CROPS—(continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NEC- TARINES.	APRICOTS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
5. Southern Counties.										
SURREY (continued) ..	Under	Under	Under	Under	.....	.....	Average	Over; good	.....	W. H. Honess, Hopedene Gardens, Holmbury St. Mary, Dorking.
	Average; good	Average; on walls Under; on Standards Average	Average; good	Under; very good	Average; good	Under; bad	Average; very good	Average; very good	Under	James Watt, Mynthurst Gar- dens, Reigate.
	Average	Under; bad	Average	Under	Under	Under	Average	Average	Under	Jas. Lock, Oatlands Lodge Gardens, Weybridge.
SUSSEX	Under; bad	Under; good	Under; good	Under; good	Under; bad	Under; bad	Average	Average; good	Under	John Smith, Coombe Court Gdns., Kingston-on-Thames.
	Under; good	Under; good	Under; good	Under; good	Average; good	.....	Average; very good	Average; very good	Under; good	J. Osborn, Wykehurst Park Gardens, Bolney, Nr. Hay- wards Heath.
	Average	Average	Under	Under	Average	Under	Over; good	Average; good	Under	J. Muddell, Sedgwick Park Gardens, Horsham.
	Under	Under	Under	Under	Under	.....	Under	Over; good	Under	A. Wilson, Bridge Castle Gardens, Tunbridge Wells.
	Under; good	Under; good	Under; good	Under; good	Average; good	Average; good	Average; good	Average; good	.....	William E. Bear, Magham Down, Hailsham.
	Under; good	Under; good	Under; good	Average; very good	Under	.....	Average; good	Average; good	Average	W. H. Smith, West Dean Park Gardens, Chichester.
	Under	Under	Under	Under	Average	Under	Under	Under	Under	W. A. Cook, Leonardslee Gardens, Horsham.
WILTSHIRE	Average; very good	Under; good	Under; good	Under; bad	Under; bad	.....	Over; very good	Over; very good	Under; good	H. C. Prince, Buxted Park Gardens, Uckfield.
	Under; bad	Under; good	Under; good	Under; bad	Average; good	Under; good	Average; good	Average; very good	.....	W. J. Langridge, Ote Hall Gardens, Burgess Hill.
	Under	Under	Under	Average	Under	Average	Over	Over	Under	George Brown, Bowood Gar- dens, Calne.
	Under; good	Under; good	Average; good	Average; good	.....	.....	Under; very good	Over; good	.....	Thomas Challis, Wilton House Gardens, Salisbury.
7. England, N.W.										
LANCASHIRE	Under; good	Under; good	Under; good	Average; good	Not grown outside	.....	Average; good	Average	.....	E. F. Hazelton, Knowsley Gardens, Prescot.
	Average; good	Under; good	Under	Over; very good	Under	.....	Over; very good	Over; bad	.....	H. Parkinson, Duxbury Park Gardens, Chorley.
	Under; bad	Under; bad	Under; bad	Average; very good	.....	.....	Average; good	Average; bad	Under; bad	T. Wyton, Abboystead Gar- dens, nr. Lancaster.
WESTMORELAND ..	Average; good	Under; good	Average; good	Average; good	.....	.....	Average; good	Over; good	.....	W. A. Miller, Underley Gar- dens, Kirkby, Lonsdale.
	Under; bad	Under; bad	Under; good	Under; good	.....	Under; bad	Average; good	Average; good	.....	F. Clarke, Lowther Castle Gardens, Penrith.
	Under	Under	Under	Under	.....	Under	Under	Average	Under	J. Moorhouse, Dalton Hall Gardens, Burton.
	Under; bad	Average; good	Under; bad	.....	.....	.....	Average; very good	Average; good	.....	W. Caton, Helme Lodge Gar- dens, Bardal.
CORNWALL	Under	Under	Average	Over; very good	Over; very good	Average; good	Over; very good	Under; good	Average	A. Cardell, Pencarrow Gardens, Bodmin.
DEVONSHIRE	Under; good	Under; good	Average; good	Under; bad	Average; very good	Average; very good	Average; very good	Average; good	Average; good	James Mayne, Bicton Gar- dens, Budeigh, Saltiton.
	Under; good	Average; good	Average; good	Average; good	Over; good	.....	Over; good	Over; good	Average	E. E. Bristow, Castle Hill Gardens, South Molton.
	Under	Under	Under; bad	Under	Average	.....	Over; good	Average	.....	Geo. Baker, Membland, New- ton Ferrers, near Plymouth.
	Under; good	Under; bad	Under; good	Average; very good	Average; good	Under; bad	Average; very good	Over; very good	Under; bad	J. Wilson, Killerton Gardens, Exeter.
GLOUCESTERSHIRE	Under; good	Under; bad	Average; good	Average; good	Over; very good	Average; good	Over; very good	Over; very good	Average; good	J. R. Tooley, Toddington Manor Gardens, Wim- borne.
	Under	Under	Under	Under	Under	Under	Under	Average; good	Under	William Keen, Bowden Hall Gardens, near Gloucester.
	Under	Under	Under	Under	Over	Under	Average	Average	Average	John Banting, Tortworth Gardens, Failand.
	Under	Under	Under (except Victoria)	Average	Under	Average	Average	Over; good	.....	William Nash, Badminton Gardens, Gloucester.
	Under	Under	Under	Under	Average	.....	Under	Average	.....	Wm. J. Jefferies, Royal Nur- series, Cirencester.
	Under	Average; good	Under	Average; good	Average; good	Under	Over; good	Over; good	.....	F. C. Walton, Stanley Park Gardens, Stroud.
	Under	Under	Under	Under	Under	Average	Average	Average	.....	Arthur Chapman, Westonbirt Gardens, Tetbury.
	Under	Under	Under	Under	Under	Average	Over; good	Average; good	Under	W. H. Berry, Higham Court Gardens, Gloucester.
8. England, S.W.										
HEREFORDSHIRE ..	Under; good	Under; good	Under; good	Average; good	Under; good	Under; good	Average; good	Average; good	.....	Thos. Watkins, Newport Hall Gardens, Eardisley R.S.O.
	Under; bad	Under; bad	Under; very good	Average; good	.....	Under; very good	Over; good	Over; good	Under; bad	A. Buckingham, Stanage Park, Brampton Brian.
	Average; good	Average; good	Under; good	Under; bad	.....	Under	Average	Under	Under	Thos. Spencer, Goodrich Court Gardens, Ross.
	Under	Under	Under	Average	Average	Under	Average	Average	Average	George Mullins, East or Castle Gardens, Ledbury.
	Under	Under	Under	Under	Under	Under	Average	Average	Under	Thos. Coomber, The Hendre Gardens, Monmouth.
SOMERSETSHIRE ...	Under; very good	Under; very good	Under; very good	Under; good	Average; very good	Under; good	Average; good	Average; good	Under; good	G. Shawley, Halswell Park Gardens, Bridgwater.
	Under	Under	Average	Average	Average	Under	Average	Average; very good	Under	W. Hallett, Cossington, Nr. Bridgwater.
	Under	Under	Average	Average	Average	Under	Average	Over	Average	A. Spurdle, Leigh House Gar- dens, near Chard.
	Under; bad	Under; bad	Over; good	Under	Under	Under	Over; very good	Over; very good	Under	F. I. Little, Knowle, Dunster.
	Under; good	Under; good	Under; very good	Under; bad	Average; very good	Average; very good	Average; good	Average; very good	Under	J. T. Rushton, Barons Down Gardens, Dulverton.
	Under	Under	Under	Under	Average	Average	Under	Under	.....	Geo. H. Head, Kingsdon Manor Gardens, Taunton.
WORCESTERSHIRE	Under; good	Under; good	Average; good	Under	Average; good	Under	Average; good	Over; good	Under	Samuel Kidley, Chipley Park Gardens, Wellington.
	Under; good	Under; good	Under	Under	not grown outside	Under	Average; except Gooseberries	Average; bad	Average	A. Young, Witley Court Gar- dens, Worcester.
	Under; good	Under; good	Under; good	Under; bad	Average; good	Average; good	Average; good	Over; good	Average; good	C. A. Bayford, Davenham Gardens, Malvern.
WALES:										
DENBIGHSHIRE	Under	Under	Under	Average; good	Average	Under	Average; except Gooseberries	Under; bad	Under	William Crump, Madresfield Court Gardens, Malvern.
	Under; bad	Under	Under	Under; bad	Average	Under	Average; good	Average; good	Walnuts under	J. Martin, Bryn Estyn Gar- dens, Wrexham.
										J. A. Jones, Chirk Castle Gar- dens, Ruabon.

CONDITION OF THE FRUIT CROPS—(continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NEC- TARINES.	APRICOTS	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
Wales.										
FLINTSHIRE	Under	Under	Under	Under	Under	Under	Average	Over	.....	John Forsyth, Hawarden Castle Gardens, Chester.
GLAMORGANSHIRE	Under; good	Under; bad	Under; good	Under; bad	Average; good	Under; good	Average; very good	Average; good	.....	James Barnard, Mostyn Hall Gardens, Mostyn.
MERIONETHSHIRE	Under	Average	Average; good	Average	Over; good	.....	Over; very good	Over; very good	Average	R. Milner, Margam Park Gardens, Port Talbot.
PEMBROKESHIRE	Under; bad	Under; good	Under; bad	Under; bad	Average	.....	Average	Over	Under	C. T. Warrington, Penllergaer Gardens, Swansea.
RADNORSHIRE	Under; good	Under; bad	Average; good	Average; good	Over; very good	Average; good	Average; good	Average; very good	Under	John S. Higgins, Rhûg Gardens, Corwen.
.....	Under	Under	Average	Under	Under	Average	Good except Gooseberries	Average	Average	Geo. Griffin, Slebeck Park Gardens, Haverfordwest.
.....	Under; good	Under	Average	Average	Over; very good	Average; good	Average; good	Average; very good	Under	W. A. Baldwin, Clynewydd Gardens, Boncath.
.....	Under	Under	Under	Average	.....	.....	Average	Average	Under	J. MacCormack, Maesllwch Gardens, Glasbury.
.....	Under	Under	Under	Under	Under	.....	Average; very good	Average; very good	Under	C. M. Nixon, Knighton.
IRELAND:										
9, Ireland, N.										
DUBLIN	Under; good	Under; good	Average; very good	Under; bad	Over; good	Under; good	Average; good	Over; very good	Under; bad	Wilson Palliser, Norton Manor Gardens, Norton, R.S.O.
MAYO	Under; bad	Average; good	Under; bad	Under; bad	Average; good	Under; bad	Under	Over	Average; good	A. Campbell, St. Anne's Gardens, Clontarf.
MEATH	Under	Under; bad	Under	Under; bad	.....	.....	Under	.....	.....	R. Savage, Belleek Manor Gardens, Ballina.
.....	Average; good	Average; good	Under; bad	Over; very good	Under	Under	Over; very good	Over; good	Average	Michael McKeown, Julians town, Drogheda.
TYRONE	Over; good	Under; good	Average	Under; bad	.....	.....	Average; very good	Average	.....	J. B. Pow, Dunsany Castle Gardens.
WEST MEATH	Under	Under	Over	Morellos Average	.....	Under	Average; good	Average; good	Under	Fred. W. Walker, Sion House Gardens, Sion Mills.
10, Ireland, S.										
ATHLONE	Over	Over	Average	Under	Over; good	.....	Over; good	Over; good	.....	George Bogie, Pakenham Hall Gardens, Castlepollard.
CORK	Average; good	Over	Average; good	.....	.....	.....	Average; good	Over; very good	.....	J. Murray, Moydrum Castle Gardens.
.....	Average; very good	Average; good	Average; good	.....	.....	.....	Over; very good	Over; bad	.....	Maurice Colbert, Ahern, Couna.
KILDARE	Average	Over	Over	Under	Under	Under	Over; very good	Average	Under	I. Dearnaly, 12, Wellington Square.
.....	Under	Under	Average	Under	Average	Under	Over	Average	Under	Fredk. Bedford, Strahan House Gardens.
ROSCOMMON	Average	Average	Average	Average	Average	.....	Under	Average; good	.....	Alexander Black, Carton Gardens, Maynooth.
WATLRFORD	Average; very good	Over; very good	Under; very good	Over; very good	Average; very good	.....	Over; very good	Average; very good	.....	Terence Rogers, Frenchpark House Gardens, Frenchpark.
.....	Under; good	Under; good	Average; good	Average; good	Over; good	Under	Average	Over	Under	Thomas Dunn, Stranally Castle Gardens, Tallow.
CHANNEL ISLANDS:										
GUERNSEY	Under; good	Under; good	Under	Under	Under	Under	Average	Average; good	.....	David Crombie, Curraghmore Gardens, Portlao.
JERSEY	Under; good	Under; good	Under; good	Under; bad	Under; bad	Under; bad	Average; good	Over; very good	.....	Chas. Smith and Son, Caledonia Nursery.
ISLE OF MAN:										
.....	Over; good	Average; good	Average	Average	.....	.....	Over; good	Over; good	.....	T. Sharman, Imperial Nursery, St. Heliers.
.....	.....	.....	.....	.....	.....	.....	Over; good	Over; good	.....	James Inglis, Brunswick Road Nurseries, Douglas.

SUMMARY.

SCOTLAND.										IRELAND.									
Records.	Apples.	Pears.	Plums.	Cherries.	Peaches and Nectarines.	Apricots.	Small Fruits.	Strawberries.	Nuts.	Records.	Apples.	Pears.	Plums.	Cherries.	Peaches and Nectarines.	Apricots.	Small Fruits.	Strawberries.	Nuts.
Number of Records	(39)	(37)	(37)	(39)	(13)	(14)	(39)	(39)	(5)	Number of Records	(14)	(14)	(11)	(12)	(9)	(7)	(14)	(13)	(7)
Average	9	3	10	15	6	4	23	26	4	Average	6	4	8	3	4	—	5	6	2
Over	1	1	2	—	1	—	12	7	—	Over	2	4	2	2	3	—	6	7	—
Under	2	33	25	24	6	10	4	6	1	Under	6	11	4	7	2	7	3	—	5
ENGLAND.										CHANNEL ISLANDS.									
Number of Records	(154)	(156)	(155)	(150)	(120)	(117)	(159)	(159)	(101)	Number of Records	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	—
Average	26	19	28	49	53	30	101	77	27	Average	—	—	—	—	—	—	2	1	—
Over	1	2	2	3	12	1	25	73	—	Over	—	—	—	—	—	—	—	1	—
Under	131	135	125	98	55	86	33	9	74	Under	2	2	2	2	2	2	—	—	—
WALES.										ISLE OF MAN.									
Number of Records	(12)	(12)	(12)	(12)	(10)	(6)	(12)	(12)	(9)	Number of Records	(1)	(1)	(1)	(1)	—	—	(1)	(1)	—
Average	—	1	3	6	5	2	11	8	2	Average	—	1	1	1	—	—	—	—	—
Over	—	—	—	—	—	—	1	3	—	Over	1	—	—	—	—	—	1	—	—
Under	12	11	9	6	3	1	—	1	7	Under	—	—	—	—	—	—	—	—	—

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Special Notice to Correspondents.—The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

Letters for Publication. as well as specimens of plants for naming, should be addressed to the EDITORS, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Local News.—Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Illustrations. The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c., but they cannot be responsible for loss or injury.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editors to see.

APPOINTMENTS FOR AUGUST.

TUESDAY, AUGUST 2—

Roy. Hort. Soc. Coms. meet. Scottish Hort. Assoc. meet. Leicester (Abbey Park) Fl. Sh. (2 days).

WEDNESDAY, AUGUST 3—

Northampton Municipal Hort. and Ornitholog. Soc. at Abington Park, Northampton (2 days). Worthing Fl. Sh.

THURSDAY, AUGUST 4—

Midland Carnation and Picotee Soc. Exh. at Birmingham Bot. Gdns. (2 days)

SATURDAY, AUGUST 6—

Soc. Franc. d'Hort. de Londres meet.

WEDNESDAY, AUGUST 10—

Exmouth Fl. Sh. (2 days).

THURSDAY, AUGUST 11—

Malmesbury Fl. Sh. Taunton Fl. Sh. Holyport Fl. Sh.

TUESDAY, AUGUST 16—

Roy. Hort. Soc. Coms. meet.

WEDNESDAY, AUGUST 17—

Shropshire Hort. Soc. Exh. at Shrewsbury (2 days).

TUESDAY, AUGUST 23—

Roy. Oxfordshire Hort. Soc. Autumn Sh.

THURSDAY, AUGUST 25—

Roy. Hort. Soc. of Aberdeen Exh. at Duthie Park (3 days). Exh. at Zeist, Holland, opens.

TUESDAY, AUGUST 30—

Roy. Hort. Soc. Coms. meet.

WEDNESDAY, AUGUST 31—

Glasgow and West of Scotland Hort. Soc. Sh. in St. Andrews Halls, Glasgow (2 days). Carlisle Fl. Sh. (2 days). South Shields Fl. Sh. (2 days).

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich 62°1°.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, July 27 (6 P.M.): Max. 64°; Min. 51°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, July 28 (10 A.M.): Bar. 29.9; Temp. 69°; Weather—Overcast.

PROVINCES.—Wednesday, July 27; Max. 62° Guildford; Min. 56° N.W. coast of Scotland.

In presenting our annual reports on the condition of the hardy fruit crops in the British Isles it has to be admitted that the prospects this season are distinctly unsatisfactory. This is so far the case that, in respect to the principal crops—Apples, Pears, Plums, and Cherries—the returns indicate such deficiencies as, happily, we have not experienced for some years. Concerning Apples, there are 226 returns, and, of these 180 describe the crops below the average, whilst in only five instances are there over-average crops. If the general yield were up to the average, it would be indicated by the number of returns of over-average crops equalling the number of under-average returns; therefore, some idea may be obtained of the deficiency by considering the proportion of 5 over-crops to 180 under-crops.

Again, our valued reporters are mainly the same who have contributed information on the subject for many years past, and have acquired a systematic method of estimating their crops; consequently, it is useful to compare their returns with those of last year, which may be seen in the summary printed on this page. It will be observed that, in respect to the Apple crop, there were 63 over-average reports last year and 81 under average; therefore, the proportion was as 63 to 81, instead of 5 to 180. The deficiency of Apples is so general that reports from the different portions of the country are nearly equal in their lack of promise. Scotland reports 1 above and 29 below the average; England 1 above the average and 131 below; Wales returns 12 reports, every one of which is under the average; whilst Ireland reports 2 above and 6 under the average. It is interesting to note that what little advantage one portion of these islands has over another belongs to Ireland. Another matter connected with the Apple crop may be mentioned in passing, namely, that a large proportion of the fruits that set have since fallen from causes not apparent; perfectly sound fruits have dropped in considerable numbers, just as might have been expected in a season of drought, but hardly in such weather as characterises the present season. This circumstance appears to indicate that the trees were not in a condition to bear satisfactory crops, even had the weather during May favoured a good set.

The Pear crop is equally disappointing, for there are only 7 returns of above average out of a total number of 222, whilst the number of under-average crops amount to 187. In this case also Ireland appears to fare best, for out of 14 returns there are only 6 which report crops below the average. In Scotland there is only 1 report above average, in England 2, and in Wales there is 1 average crop against 11 that are reported as deficient. Plums are only a shade better than Apples. Out of 221 returns, 56 report average crops or better, and 165 are under the average. Cherries, again, are distinctly scarce; there are 5 over-crops, as against 137 under the average, whilst the average crops number 74. Peaches and Nectarines were satisfactory last year, and, in not a few instances, fair crops were ripened even on standard trees in the warmer counties. This year the tale is different, although the returns are much more favourable than those in respect to the fruits already named. Of 154 returns, 68 are average, 68 below the average, and 18 over-average. Apricots are de-

ficient in all parts of the kingdom. The seven reporters from Ireland all state under-average crops, whilst in Scotland, England, and Wales the prospects are not very much better.

It is not until we turn to the small fruits (which include Raspberries, Currants, and Gooseberries) and Strawberries that the returns are satisfactory. In these cases the number of average and over-average crops greatly exceed the returns in which deficiencies are reported, but neither in the case of the former group nor in that of Strawberries are the returns so favourable as last year. There are no returns of over-average crops of Nuts, and the number of average crops is 35, against 87 below the average.

In the face of these figures there is no doubt but that the present season is remarkable for great scarcity of most hardy fruits, and the public will have to look to the Colonies and foreign countries for most of their supplies of Apples, Pears, and Plums.

In any attempt that is made to determine the causes of the deficiency, careful consideration must be given to the character of the autumn season last year, when the weather was certainly not of the best description for maturing the young shoots. But, when sufficient allowance has been made for that, it may still be the fact that the unusually bad weather experienced this season has been mainly responsible for the results.

In subsequent issues we shall print the remarks our correspondents have favoured us with upon this subject, for, as we have said in effect already, they are the remarks of practical fruit-growers, who have accustomed themselves to make careful observations and form intelligent deductions from the facts observed.

The Strawberry Season.

Though prices have been disappointing to growers during the last two or three seasons, there is no reduction in the supply of Strawberries forwarded to London and the other important towns of the kingdom. On the contrary, the figures of last year's crop greatly exceed those of any former season, and, when the returns for the current year are made up, it will probably be found that there has been a further increase. It appears that, in spite of a very much lower average price than growers were accustomed to receive a few years ago, Strawberries are still remunerative, though it is probable that a part of this season's crop has been sold at prices that left little or nothing for the producer. Fruit was sold during the third week

GRAND SUMMARY, 1910.

Records.	Apples.	Pears.	Plums.	Cherries.	Peaches and Nectarines.	Apricots.	Small Fruits.	Strawberries.	Nuts.
Number of Records	(226)	(222)	(221)	(216)	(154)	(146)	(227)	(225)	(128)
Average	41	28	50	74	84	36	142	118	35
Over	5	7	6	5	18	1	45	92	—
Under	180	187	165	137	68	109	40	16	87

SUMMARY OF 1909 FOR COMPARISON.

Records.	Apples.	Pears.	Plums.	Cherries.	Peaches and Nectarines.	Apricots.	Small Fruits.	Strawberries.	Nuts.
Number of Records	(246)	(243)	(240)	(233)	(174)	(164)	(242)	(240)	(146)
Average	102	125	119	128	84	72	78	102	71
Over	63	21	44	76	75	47	157	119	22
Under	81	97	77	29	15	45	7	21	53

in June at the price of 6d. and 7½d. per gallon basket, which means about 1½d. to 1¾d. a pound.

The following table shows the growth of the Strawberry-growing business in the Southampton district—which is now the chief centre of the industry—during the past half-dozen seasons:—

		FRUIT	
		Tons.	Baskets.
1904	... ..	4,250	1,900,148
1905	... ..	3,400	1,500,000
1906	... ..	2,794	1,250,000
1907	... ..	4,705	2,100,148
1908	... ..	4,019	1,762,804
1909	... ..	6,585	2,948,195

These figures apply only to a single district, and it may be pointed out that this increase of production has not been equalled in other Strawberry-growing areas, although there has been an advance all round. In the West of England, for example, the business, though it is as nothing compared with that carried on in Hampshire, has more than quadrupled itself within the last three years, as the figures supplied in the returns amply testify. In the season of 1906 the Great Western Railway Company conveyed only 428 tons of Strawberries from the Saltash and Tavistock districts, and in the following year 433 tons. Last year, however, the figures for home-grown fruit had risen to 1,793 tons; and, at the same time, there has been a considerable advance in the Strawberry traffic from the Continent conveyed by this company. Strawberries from France, for which the season is naturally confined to the early part of the year, totalled 1,150 tons on the G.W.R. system.

It is said that growers are beginning to declare that Strawberry growing is not what it was, and are looking around them for the adoption of some measures that will bolster up the market. In these circumstances, the consumer may be able to make one or two useful suggestions. One of the grievances of the public is that, whilst they are reading in the papers every day that there is a glut of Strawberries and that the fruit is being sold at ruinously low rates, the prices in the shops are not correspondingly reduced. Even when the fruit is fetching no more than 2d a pound in Covent Garden, shopkeepers are charging three and four times that amount to their customers. This state of things is deplorable. It is easy to see that the retailer's risk in goods of this description is very great, but the margin between the wholesale and retail prices is too large. If the shopkeeper is asked why he charges 8d. or 9d. a pound for best Strawberries in punnets of one pound, when the fruit is being sold in the market at 1½d. to 3d. per pound, he states that the punnets he offers are the selected fruit from his purchases. He then proceeds to show the sort of sample that is left after he has removed the best, and it appears as though he has often a reasonable excuse for pursuing such methods. Most of his customers naturally want the best fruit, and, when he has given them that, he finds only too frequently that the remainder is unsaleable.

Then there is the old story of topping-up with the best fruit after having carefully hidden the inferior produce underneath. We do not suggest that this is quite so common a custom as it used to be, but it still prevails,

Has any grower ever tried rejecting all his small and misshapen berries and marketing only the very best under a registered brand? The foreigner does it with Apples and Oranges, but the system is scarcely known in this country, certainly not as regards Strawberries. The fruit might not at first fetch any better price, but as it became known among buyers that a particular brand could always be relied upon in every way, the proprietor would benefit, if not by better prices, at least by a sure market for his goods. The present practice of mixing "firsts" and "seconds" sometimes results in an anomalous state of things. One day lately the writer bought some Strawberries at a shop in the City at 8d. a pound by taking a 4½-pound basket, while loose Strawberries of better size but inferior in condition were being sold in the same shop at 10d. per pound. The latter, although sold as selected, had received an extra handling, but it seems that the general public thinks more of size than of good condition. The retailer, also, knowing that in selling a whole basket he was getting rid of fruit that would, so far as most of it was concerned, be of secondary value to him, was willing to let the basketful go at 2d. a pound cheaper. Of course, the quantity sold had something to do with the lower price charged, but, as the shopkeeper explained, it was the relief from the trouble of grading the fruit that was the chief inducement to him to sell an untouched basket at the lower rate.

It is to be regretted that some growers still keep to the old custom of marketing their fruit in peck baskets holding 10 or 12 pounds. If they could see the fruit when it is overhauled by the retailer, they would discover why prices are often bad for Strawberries packed in such fashion. A package of this size is much too large for Strawberries, the lower layers being often reduced, after a railway journey, to something very like pulp. The 4½ to 5 pounds basket, as used by the Southampton growers, is quite large enough for fruit that has to travel any distance.

This raises another question regarding the packing of Strawberries, for would not the fruit be more saleable if it could be put up in still smaller packages by the grower? It would be rather more trouble, but it is probable that the public would be more ready to buy two or three pounds at a time if they could get it in such quantities in the growers' original packages. When the outdoor Strawberries appear in the market—and it is those only that concern the general public—the purchaser must take his choice between the basket of four to five pounds (which is probably too big for him) and the punnet of one or two pounds put up by the retailer, and, consequently, subjected to a double handling.

This state of things might be improved upon if the grower could see his way to using packages of smaller size, and could take a leaf out of the Frenchman's book, and use the two-pound boxes in which we see the foreign fruit so neatly packed early in the season before the English crop is on the market? The carriage would not cost much, if any, more than the baskets do at present, for the inside boxes of a crate containing a couple of dozen packages could be made of very light material. The labour involved in putting up fruit in this fashion would, of course, be much heavier than at present, but if these packages were

marketed under a brand and only selected fruits were packed in them, it should only be a question of time before both the retailer and his customers preferred them to the fruit marketed in the ordinary fashion.

Unfortunately, directly there is a decline in price in any commodity, the tendency is to try and save in the cost of production, and it would probably be hard to persuade any grower at the present time to adopt a system of marketing that would involve him in greater expense than he is put to at present. But, from the public point of view, there is room for a better method of marketing Strawberries, and we commend the subject to the consideration of the more enterprising growers.

OUR SUPPLEMENTARY ILLUSTRATION.—

Among the pleasant memories which travellers on the Continent bring home with them are those of visits paid in the early morning to the market places where, under bright skies and amid delightful surroundings, buying and selling goes on with cheerful animation. Of such places the flower-market in Brussels is among the most interesting. It is held—as is shown in the Supplementary Illustration—in the "Grand Place," which is one of the finest mediæval squares in existence. The "Place" is surrounded by beautiful buildings, the chief among which is the Hôtel de Ville, recognisable by its façade ornamented by innumerable modern statues of the Dukes of BRABANT and other notabilities.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Committees will take place on Tuesday, August 2, in the Vincent Square, Westminster. At the afternoon meeting of Fellows a lecture on "The Planning, Building and Planting of Small Rock-gardens" will be delivered by Mr. A. CLUTTON-BROCK.

THE SALE OF POISONS.—We are informed that the defendant in the case of Pharmaceutical Society v. Peacock, which was heard in the City of London Court on June 21 last, has intimated that he will not appeal. It will be remembered that defendant was an assistant to HOBBIES, LTD., and judgment was given for the Society, but leave to appeal was given upon condition that the penalty and costs were paid into court. The proceedings arose in connection with the sale of XL-All fumigating compound. A report appeared on p. 435.

GLADIOLUS BRENCHEYENSIS.—Regarding the introduction to commerce of this popular Gladiolus, Mr. GEORGE BUNYARD, of the Royal Nurseries, Maidstone, writes to say that he noticed a statement in a contemporary recently to the effect that enquiries have been made respecting the origin of *Gladiolus brencheyensis* at the village of Brenchley in Kent, but no particulars could be gleaned. Mr. BUNYARD therefore wrote as follows:—"In reference to your note as to origin of this *Gladiolus*, allow me to say that over 50 years back, my father purchased bulbs from the raiser, a Mr. HOOKER, of Brenchley, Kent, who raised it from *Gandavensis*. I can well recollect selling them at 2s. 6d. each. We raised a big stock the same year. Mr. YOUELL, of Yarmouth, called on his round, and we sold him a quantity, which, in his sandy soil, soon enabled him to flood the country with it." Mr. BUNYARD now informs us that he believes that Mr. HOOKER was once a nurseryman. Mr. BUNYARD knows nothing about Mr. YOUELL's foreman, as mentioned in our note upon the newly-established American *Gladiolus* Society (see p. 45), but he well recalls Mr. YOUELL himself, a cheery, short and thickset man. *Gladiolus brencheyensis*, writes Mr. BUNYARD, is still one of the most reliable sorts for massing, being less liable to disease,

FLORISTS AND THE FACTORY ACTS.—In the course of an important speech in the House of Commons on July 20 (Home Office Vote, Factory Inspection), Sir CHARLES DILKE raised the question of the position of florists with respect to the Factory Acts. In the debate, which arose out of this speech, Sir J. D. REES and Mr. MILDMAY stated that, if the Factory Acts were rigidly enforced in the case of florists, numbers of English women and girls would lose employment and their places would be taken by alien men. Mr. MASTERMAN, speaking on behalf of the Home Office, made a reply from the *Times* report of which we make the following extract:—The question of the florists had been raised by the hon. member for the Montgomery Boroughs and by his right hon. friend. He was amazed at the statements made by his hon. friend, who, in a question the other day, suggested that there

in florists' workshops beyond the normal working hours was entirely a local question connected with the demands in the West-end of London. The reports from the other parts of the country show that no such necessity for the working of long hours existed. There was no cast-iron and no inelastic system. In florists' workshops women and girls could work from 6 a.m. to 6 p.m., from 7 a.m. to 7 p.m., or from 8 a.m. to 8 p.m., with two hours overtime, during five weeks in the year by merely sending a notice to the factory inspector before 8 o'clock on the same day on which it was intended to work overtime. While accepting and agreeing with the decision of Judge RUEGG, he pointed out that last year they had gone thoroughly through the various florists' workshops that might be affected. They found that the number was exceedingly small. The total number of

CULTIVATION OF VACANT LAND.—On the 21st inst. Lord CARRINGTON, President of the Board of Agriculture, accompanied by Mr. RICHARD WINFREY, M.P., and Mr. E. J. CHENEY, Small Holdings Commissioner, conducted by Mr. JOSEPH FELS, visited the grounds held by the Vacant Land Cultivation Society from the Gas, Light & Coke Co., at West Ham. Over an hour was spent in the inspection of the well-cropped plots, of which there are 266 on an area of 33 acres, and the visitors expressed much satisfaction with the results obtained by the men. Lord CARRINGTON closely questioned several of the plot-holders with regard to the value of their produce, used or sold, and the information elicited indicated an average of £8 to £10 per plot of 20 square rods. In every case especial value was attached to the supplies of fresh vegetables for home use, the men, wives and children thus benefited numbering over 1,200. The ground lent by the Gas, Light & Coke Co. was formerly used for market gardens. Mr. R. L. CASTLE, Superintendent, states that the occupations of the plot-holders are as follow:—General labourers, 126; dock labourers, 50; coal porters, 23; various, 67. The produce is chiefly consumed in the homes of the men, but some is sold retail.

PUBLICATIONS RECEIVED.—*Eulletin of Miscellaneous Information, Royal Botanic Gardens, Kew.* (London: Darling & Son, Ltd.) Price 3d.—*The Journal of the Royal Horticultural Society*, edited by F. J. Chuteuden, F.L.S. (London: Spottiswoode & Co.) Price 6s.—*The Green Book of London Society*, by Douglas Sladen and W. Wigmore. (London: J. Whitaker & Sons, Ltd.) Price 5s. net.—*Transactions of the Royal Scottish Arboricultural Society*, Vol. XXIII, Part II. July, 1910. (Edinburgh: Douglas and Foulis.) Price 3s.



FIG. 29.—THE SILK-COTTON TREE (BOMBAX SP.) IN NIGERIA.

were thousands of honest British working women being thrown out of employment, and whose places were being taken by aliens under the stern, cast-iron regulations dealing with the florists. If a hundredth part of his hon. friend's accusation were true there would be assuredly a case for consideration on the part of the Home Office, but really there was no justification for the allegation as revealed by the facts. This year a Home Office inspector had reported that before the visits of inspection women and young persons worked from 5 a.m. to 10 p.m., that there was no half-holiday, and no proper meal times were recognized. One young person, 15 years of age, had been employed 31½ hours, with 2½ hours for rest, and short breaks for food. The House had a right to look upon the breakdown of that system as an affirmation of freedom in England. The question of women working

women who might be affected was 32. According to an inspection made this year, to see what the result had been, it was found that there were no cases of women being dismissed as the result of the order. They found one case given of a man having been taken on as a new hand, not an Englishman; and another case of a boy being taken on as a new hand, also not an Englishman. Thus the thousands of aliens of his hon. friend resolved themselves into 1½ aliens. The Government were asked to allow 100 days of work at florists from 8 a.m. to 10 p.m., and 30 days from 6 to 10, representing a 14 and 16-hours day. There was nothing like this in our factory legislation. If, and when, evidence could be submitted showing a hardship connected with the work the Home Secretary would always exercise an open mind on the subject; but as the facts were at present, he had no intention to relax the system.

PLANTS OF SOUTHERN NIGERIA.

At a recent meeting of the Linnean Society, Mr. P. A. Talbot exhibited a series of coloured drawings by Mrs. Talbot of plants from Southern Nigeria, and displayed a map and photographs of the scenery. He described the country as very hilly and densely wooded.

The photographs were of the Kwa River, and gave some idea of the beauty and density of the vegetation (see fig. 30), but none of the glory of colouring or variety of the multitude of flowers. Right down to the water's edge grow giant Arums, green on the outer sheath, but cream splashed with purple within. Behind these spring trees of every shape and tint, from Mimosas, with their delicate mauve or cream-coloured flowers and feathery foliage, to the huge trumpet-shaped flowers of *Gardenia physophylla* and the heavily-scented, purple-splashed blooms of *G. Kalbreyeri*, or the great *Berlinia*, the white flowers of which shine with a pearl-like lustre from amid its dim, dark leaves.

About this river lies the boundary between the sedimentary deposits below and the crystalline rocks above. The line of demarcation runs along this parallel to the Akwa Yafe, on the German border and the Calabar River on the other side. By far the greater part of the district, therefore, is composed of metamorphic rocks, in which gneiss predominates.

One of the most striking features in these ancient forests is the hurry shown by all trees to reach the light above the thick undergrowth.

Perhaps the tallest of all the bush giants are the Silk-cotton trees. It is difficult to get a good photograph of these, owing to the density of the surrounding bush, which would have to be cleared for a great way before a picture could be taken. The photograph (fig. 29) is of a comparatively poor specimen, which stood on the edge of a clearing. It is only about 150 feet high. The man standing at the base was the tallest carrier available, a man well over 6 feet. These trees are often 200 to 250 feet high, and have a girth of over 80 feet.

Another photograph (not reproduced) showed the source of the Calabar River. It was on the slope of a hill near by that a *Napoleonaea* was discovered, which is not only a new species, but which shows an inflorescence hitherto unknown in this interesting genus.

Four new *Napoleonas* have been brought home—thus adding half as many again to those already known. The second, with the consent of the courteous authorities at the Natural History Museum, has been named after Mr. Talbot's friend and former leader, Boyd Alexander, who was murdered on April 2 in Central Africa.

Upwards of 50 specimens of coniferous trees were discovered in the district. Detailed drawings of all of these were made, but, unfortunately, many of the actual specimens were ruined by climatic conditions or lost in transit. This number only represents a small proportion of those to be found. Mr. Talbot hopes to bring back at least double the number from his next tour.

Of the *Balanophoraceæ*, five species have been brought home. The *Gardenias* of the district are specially striking in the size and beauty of their flowers. The fruits of most of them afford excellent black dyes, some of which are at present being tested at the Imperial Institute, as is also a new fibre, made from an epiphytic *Arum*, which was forwarded with them.

Two kinds of *Geasters* were found in the district. These are the first of this genus discovered in Africa. Altogether over a thousand drawings were made in the course of the year.

The Week's Work.

PLANTS UNDER GLASS.

By JOHN DONOGHUE, Gardener to JOSEPH PICKERSGILL, Esq., Bardon Hill, Westwood, Yorkshire.

Dipladenia.—Where cut flowers are in demand for decorative purposes, *Dipladenias* are very serviceable. As climbing plants for cultivation in the stove, they will continue flowering from three to four months. If there is not sufficient space for the culture of specimen plants, a batch may be raised to supply blooms in spring by inserting cuttings at the present time. When roots have formed, the plants may be potted off singly into small 60-sized pots, and be placed near to the glass, keeping them growing steadily throughout the autumn. They should be repotted as the small pots become filled with roots. The most suitable compost is one consisting of fibrous peat two parts, loam with the fine particles shaken out one part, and the remaining part made up of coarse Bedfordshire sand, well-decayed sheep manure, and a small quantity of broken charcoal. *Dipladenias* may be trained upon the usual balloon trellis, but under such treatment they do not always succeed so well as when cultivated as roof climbers. During the flowering season, when the long trails of flowering shoots are allowed to hang loosely from the roof of the plant stove, *Dipladenias* present a beautiful floral picture.

Ixora.—These plants revel in an abundance of heat and moisture, which conditions indeed appear to be essential to their successful culture. Plants may be raised from cuttings rooted at any time of the year, but the present season is very suitable for raising batches of plants to flower early next summer. Select the strongest cuttings from half-ripened shoots, and place them around the edges of small 60-sized pots, 6 to 14 in a pot, and plunge the receptacle up to the rims in a hot-bed having a heat of 70° to 80°. If the propagating case is kept closed for a few weeks, the cuttings will form roots quickly, and they may afterwards be gradually hardened to the air and light. For a potting compost, during the early stages, peat and sand in equal parts are suitable, but when the plants are ready for repotting into 4-inch pots add a small quantity of the best yellow loam. The *Ixora* always has a tendency to flower in its early stages of growth; but early flowers, however, should be removed, and the plants kept growing until a fair stage of development is attained. After that stage, they may be brought into flower in successional batches from May until late in the autumn. When young plants are desired on the single stem for decorative purposes, *Ixora Duffii* is the best variety for the purpose. It forms trusses of flower of immense size. As *Ixoras* are very subject to attacks of scale and mealy bug, the plants should be syringed at regular intervals with an insecticide, and sponged occasionally if the best results are desired.

Herbaceous Calceolarias.—These will now be ready for potting off singly into small 60's, using a compost consisting of loam, leaf-mould and sand in equal parts. They should be carefully shaded from sudden outbursts of sunshine, and kept moist by an occasional dewing over with a syringe.

Cineraria.—*Cinerarias* require similar treatment to the *Calceolarias*. Both batches of plants must be kept near to the glass to ensure sturdy growth.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Surrey.

Epidendrum.—Many of the species of this extensive genus are of interest only to the botanist, but other species and their hybrids deserve general cultivation. When strongly-grown, they produce large panicles of brilliantly-coloured flowers that open in succession for five or six months and are extremely useful for table or other floral decorations. Among the brightly-coloured sorts are the well-known *E. radicans*

very light positions either in the *Cattleya* or intermediate houses. They should be placed together, so that they may be syringed overhead throughout the period of growth. The materials used for repotting should consist of one-fourth each of *Osmunda* fibre and *Polypodium* fibre, the other half being fresh green *Sphagnum*-moss. Cut these materials up moderately fine, and add plenty of small crocks to keep the compost in a porous condition. Other *Epidendrums* that are well worth growing and which thrive in a similar temperature are *E. prismatocarpum*, *E. fragrans*, *E. atropurpureum* (*macrochilum*) and its rare variety *album*; *E. floribundum*, *E. syringothyrsis*, *E. Cooperianum*, *E. odoratissimum*, *E. sceptrum*, *E. aurantiacum* with orange-coloured blossoms; *E. Pseudepidendrum*, which has green sepals and petals with bright orange-scarlet lip, and such hybrids as *Epi-Cattleya Nebo*, *E.-C. matutina*, *E.-C. radiata*, *Bowringiana*, *E.-C. Mrs. Jas. O'Brien*, and *E.-C. Lili-anæ*. These and other similar plants may also be repotted as soon as growth begins. The distinct *Epidendrum erubescens* grows



FIG. 30.—PANDANUS IN SOUTHERN NIGERIA, SHOWING ADVENTITIOUS ROOTS.

(See p. 84.)

(*rhizophorum*). *E. radicans* var. *Bletchleyense*, *E. Schomburgkii*, *E. fulgens*, *E. cinnabarinum*, *E. Ibaguense*, *E. arachnoglossum*, *E. crassifolium*, *E. pristis*, *E. Ellisii*, *E. evectum*, *E. paniculatum*, *E. xanthinum* (bright yellow), and the distinct hybrids *E. Boundii*, *E. Dellense*, *E. O'Brienianum*, *E. elongatum*, and *E. radico-vitellinum*. Those which are of semi-scandent habit like *E. radicans* and *E. Boundii* should be trained to some kind of support; for instance, they grow very well when tied up against a wall or pillar, the shoots being tied to neat wires or a wooden trellis, while some cultivators prefer to grow the stems singly in small pots, using ordinary garden sticks for their support. The plants of this section produce aerial roots from their stems, and frequent syringings overhead favour their growth. Now that most of these plants have passed their flowering stage, and the old shoots have grown very long, those stems with young shoots on them may be cut down to about 2 feet in length, and be repotted or replanted. These *Epidendrums* thrive well in

best when fastened to a teak-wood raft covered with living *Sphagnum*-moss, and suspended in a perpendicular position near to the roof-glass. Such varieties as *E. Wallisii*, *E. Endresii*, *E. Endresio-Wallisii*, *E. Clarissa*, *E. elegantulum*, and *E. vitellinum majus* do best when subjected to cool-house treatment during the summer months, and, in winter, in a cool position in the intermediate house. These *Epidendrums* should be supplied with plenty of water at the root whilst making their growth, and, as the last-named varieties are frequently attacked by red-spider, it is advisable to wipe the leaves and stems frequently with some weak insecticide. The white-flowered *E. (Diacrium) bicornutum* and a smaller-flowered species, *E. indivisum*, which is often imported and mistaken for the former species, require a higher temperature, the most suitable position being close to the roof-glass on the lighter side of the East India house. Established plants, whilst at rest, need but very little water to keep them plump, but, when growing, they need copious applications whenever the

soil appears to be dry. At this season, the plants will begin to grow, and, as the numerous young roots push out from the new growth, fresh rooting material should be afforded to the plants in need of it. Plants now imported should be suspended in shallow pans, with only broken crocks and a pseudo-bulb here and there tied to the wire of the pan to keep them steady. Pour plenty of water through the crocks every day, and, when growth commences, raise the base of the plant just above the rim of the pan, and surface the crocks with the usual compost, pressing it down rather firmly. The rare *E. nemorale* should receive the same treatment. *E. prismatocarpum*, being now at rest, should be kept comparatively dry at the root, but not so dry as to cause the pseudo-bulbs to shrivel. Place the plant in a light, cool position in the intermediate house. *Epi-Laelia*, or *Dia-Laelia Veitchii*, should be grown in the Cattleya house.

THE KITCHEN GARDEN.

By JOHN DUNN, Kitchen Garden Foreman,
Royal Gardens, Windsor.

Turnips.—A good breadth of Turnips should be sown now for use during late autumn and winter. A sandy soil that was manured for some previous crop will be suitable for this sowing. If the ground is dry the drills should be thoroughly soaked with water on the afternoon previous to sowing the seed. This is much better than watering the bed after the seed has been sown. When the young plants can be seen above the ground constant attention must be given to dusting them with sifted wood-ashes or lime in the early morning while the dew is still upon the plants. Keep the Dutch hoe at work between the rows, or Turnip fly may prove troublesome. This is the most important sowing of Turnips in the whole year, as the winter supply depends upon it. When the plants are large enough to handle they should be thinned to 10 inches from plant to plant, as good roots will form much quicker if given plenty of room between the plants. Red Globe, Green Top Stone, and Golden Ball are good varieties for furnishing a winter supply. A sowing of Golden Ball may be made a week later to stand the winter in the open and yield supplies during the spring.

Parsley.—The Parsley sown in June should now be ready for pricking into cold frames or other sheltered places where a covering can be applied in rough weather during winter. If there are no unheated pits available a plantation may be made at the foot of a south wall. The soil for this purpose should be made moderately firm before planting takes place. In pits, 12 inches may be allowed between the rows, and 6 inches from plant to plant. The soil between the rows must be kept stirred by a Dutch hoe. Where a daily supply is necessary this is the best way to secure it during winter.

Coleworts.—Continue to plant Coleworts for use during autumn. If the ground is dry the drills should be well saturated with water previous to planting. Coleworts should be allowed 15 inches between the rows and 1 foot from plant to plant. As soon as they have commenced to root the ground should be broken between the rows with a draw hoe or the point of a digging fork. Rosette is the best variety for autumn use, but to stand the winter Hardy Green or Drumhead Colewort are the most reliable varieties.

Cauliflowers.—Plants that are expected to "turn in" next month should receive liberal supplies of manure water. If allowed to become too dry at the root, premature bolting is almost sure to take place. There are few crops that require more liberal treatment than summer Cauliflowers, therefore every attention should be given them so that they may grow from start to finish without a check, especially those planted a month ago and intended for use during August and September. If white fly should make its appearance, apply a liberal dusting of soot while the dew is on the leaves early in the morning. A plantation of the variety Autumn Giant may still be made for late autumn use; these plants should receive a plentiful supply of water to settle the soil amongst the roots as soon as planted.

French Beans.—These must now be planted in cold frames for furnishing a supply in autumn. It is not safe to trust to outdoor crops after the middle of September, and few crops will be more valuable than a pit of French Beans after the first autumn frosts. Canadian Wonder is one of

the best varieties for this purpose and should be planted in rows 20 inches apart. The lights should be left off the pit until frosts are likely to occur. French Beans should be kept closely picked whether required for use or not, or the plants soon become exhausted. Occasional waterings of liquid manure prolong their season of bearing.

FRUITS UNDER GLASS.

By B. GOODACRE, Gardener to Sir ERNEST CASSELL,
G.C.B., Moulton Paddocks, Newmarket.

Early Vines and Peaches.—The vines intended for early forcing will now be ripening their wood. Keep a dry atmosphere with plenty of ventilation, and give only sufficient water to preserve the roots in a healthy condition. Peach trees will require careful attention in this respect or dropping of the buds may result later on. Endeavour to keep the foliage clean and healthy until the leaves are fully matured and ready to fall off. As frequent syringings are not conducive to the ripening of the wood, the trees may be sprayed with some safe insecticide as a preventive of insect pests. If any of the vines are infested with mealy-bug they may now be cleansed with a mixture of soft soap and paraffin. Use a wineglassful of the oil and 4 ounces of soap to each large bucket of water. Dissolve the soap in boiling water, and add enough warm water to make up the required quantity. During the process of spraying, return every second syringe-ful to the bucket, to prevent any oil floating on the top of the water. This mixture should be used whilst it is still warm, and it should be applied forcibly with a syringe, taking care to work it into the crevices of the bark and into the joints of the trellis and wood-work. The work can be done more thoroughly if one person arranges the foliage whilst another uses the syringe. A little short manure or rough leaf-mould spread on the border will absorb any excessive drip. This treatment may be repeated after the lapse of two or three weeks if necessary.

Young Vines.—Vines raised from eyes early in the year may now be exposed to full sunshine and free ventilation. Keep the roots moderately dry. If watering is carefully attended to, the plants will not make much more lateral growth. A little heat should be kept in the water pipes during dull weather to promote a buoyant atmosphere and help to ripen the wood. Vaporise the house occasionally with the sulphur vaporiser as a preventive of mildew. Keep a sharp look-out for thrips and red spider, which are apt to thrive in the dry atmosphere, and take prompt measures for their destruction.

Late Vines.—Continue to apply liquid and artificial manures to the borders as often as necessary. The Grapes swell considerably during the colouring period, and derive much benefit from such applications of manure. Maintain a moist, genial atmosphere with free ventilation whenever the weather is suitable. Keep a little heat in the water pipes during cold weather to prevent a cold, stagnant atmosphere.

Strawberries.—The earliest layers in small pots being now well rooted, they may be detached from the parent plants. Place the small pots containing the layers closely together on a hard ash bottom in a partly-shaded position. The pots and soil should be in readiness, in order that the layers may be moved into the fruiting pots without delay. It is important to have this potting done early, so as to get large, well-ripened crowns before winter.

THE FLOWER GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS,
Aldenham House, Hertfordshire.

Propagation.—The end of July or the beginning of August is perhaps the most suitable time for inserting cuttings of many of the choicer shrubs, as the growth is sufficiently ripened and not unduly hard. At this time of the year the atmosphere of the frames may be kept humid with frequent syringings to promote a speedy root-action. It is surprising what a number of species may be raised in this manner if care and attention are given to airing and damping. An excellent method of striking cuttings is by the system known as the hot frame system. The cuttings are inserted in rows in a bed of silver sand and the frame kept perfectly close and no shading given at any time of the day, but fre-

quent syringings must be given when the sun is powerful or much damage will result. When rooted, the plants may be potted up singly and placed in cold frames, which should be kept close until the plants have recovered from the shift, when they may be plunged in such cold frames as can be protected during the winter months. In the event of a hard winter, it is quite possible that stocks of various subjects in the open ground may suffer or be killed outright, whereas by this method of procedure the young stock may be placed out-of-doors next spring when severe weather is past. Other plants of a sub-shrubby nature now making growth may be treated in a similar manner.

Seed saving.—Plantings from which it is intended to save seed must be carefully watched after the flowering period is over, and when approaching ripeness the stalks should be cut. This operation should always be performed when they are in a dry state. The best way to keep the seeds, if they are not required for immediate sowing, is to place the seed-vessels head downwards in paper bags, tied at the top, and placed in a dry position to thoroughly dry and ripen. Label the bag, when the seeds are placed in it, to avoid mistakes. The seed may be cleaned at a later date, when there is less pressure of work.

The shrubby Hypericums.—These will thrive practically anywhere, and are now making a bright display with their yellow flowers. Propagation is easily effected by division of the roots in winter, or any of the species may be raised from seeds. *H. calycinum*, the St. John Wort, is perhaps the best of all plants to provide a good carpet under trees. Others, varying in height up to 4 feet, are *H. Androsæum*, *H. Ascyron*, *H. galioides*, *H. hircinum*, *H. Hookerianum*, *H. inodorum*, *H. kalmianum*, *H. Moserianum* and *H. patulum*.

Seasonable work.—The Rose garden will need much attention to keep it attractive. Many of the plants have developed their flowers, and if the strongest growths are now pruned to about the same length as the normal shoots, the uppermost buds will then break and produce a good supply of late Roses. Continue to remove all decaying flowers and, if any are required for Rose bowls, care should be taken to preserve them in a clean and dry state. Climbing Roses on poles, pergolas, &c., will be much benefited by the removal of the old flowering wood as soon as the flowering is past. Half-hardy climbers of rampant growth will need attention and occasional tying and training of their growths to ensure even development. The lawns have not this season suffered any ill effects from drought, and the use of the mower has been in frequent request. Worm casts are troublesome, but a thorough good brushing and rolling is the best treatment. Sweet Peas are continuing to flower well, and still making vigorous growth. Continue to remove all seed pods as they form, and stop the leading growths to encourage laterals. Strong-growing perennials, especially those growing close to fruit trees, should be soaked from time to time. *Verbascum olympicum* is a very valuable plant for the borders and the wild garden. It has large, handsome foliage and branching spikes of yellow flowers, which remain effective for some considerable time.

THE HARDY FRUIT GARDEN.

By A. R. SEARLE, Gardener to the Marquis of NORTHAMPTON, Castle Ashby, Northamptonshire.

Black Currants.—When the crop has been cleared from the bushes, give the branches a good thinning out in order to encourage the young growths from the base. If the bushes are thinned now, these young shoots will ripen much better and earlier than if left unthinned until autumn. All prunings should be taken to the rubbish heap and burnt, in order to destroy any insect pests that may be on them. Where the bushes are badly infested with the bud mite (*Phytoptus ribes*), it is best to have them grubbed up and burnt, and a fresh site should be selected some distance from the old one for a new plantation. When planting time arrives endeavour to procure young bushes from a clean and healthy stock and treat them liberally. The new site should be double dug and have plenty of well-decayed manure worked in as the digging proceeds; this should be done several weeks before the planting takes place to enable the soil to settle. It is not a good plan to plant Black Currants in large

quantities together; they should be dotted about if possible amongst Gooseberries and other bush fruits, or planted in single rows. The two best varieties grown here are Boskoop Giant and Carter's Champion.

Budding.—During the early part of August is a good time for budding Cherry, Peach, Nectarine and Plum trees. Where the branches of these trees have become bare, and it is desired to have them refurnished, this can be easily done by inserting buds of the desired variety on the old branches. The method of budding is similar to that practised for Roses. The work should be performed carefully during dull weather, and should hot weather set in immediately after the operation, those parts of the branches containing the buds should be shaded from bright sunshine. Plump buds should be selected from half-ripened wood. Make the incision at the point desired in the shape of the letter T. Lift the bark carefully and insert the bud without causing it any damage. Bind it with raffia in the usual way, just sufficiently tight to exclude air and wet. The buds should remain dormant during the winter, but in the spring they will burst into growth with the other parts of the tree. I have seen aged trees which were naked towards the centres become entirely refurnished and produce good crops of fruit the second season after being budded in this manner.

General remarks.—Push on with the work of summer pruning, as this should shortly be brought to a close. Thin out the young growths upon Fig trees, leaving sufficient only to cover the allotted space thinly; train the new shoots that are required for extension, and rub off the superfluous growths. Expose the fruits as much as possible to the sun, or they will fail to develop good flavour.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

CATLEYA MENDELII "STUART LOW."—I notice in your issue of July 16, p. 34, you refer to *Catleya Bluntei* in connection with *Catleya Mendelii* "Stuart Low." It would be interesting to know whether a plant of this rare variety is still in existence. Perhaps some reader of the *Gardeners' Chronicle* can afford information on this matter. *Laurence J. Cook.*

HISTORIC FLOWER SHOW SCHEDULE.—At the Teddington and Hampton Wick Horticultural Society's show, held on the 13th inst., Mr. P. M. McKie, one of the members of the committee, had in his possession a copy of a schedule issued by the Teddington Royal Horticultural Society, under the immediate patronage of the Dowager Queen Adelaide in 1845, when the society had for its president the Right Honorable the Earl Howe. The interesting document consisted of two pages. The exhibition took place in September, therefore Dahlias were a leading feature. Prominence was given to a class for "50 dissimilar blooms of Dahlias," and to "24 cut Roses," a rather unusual thing for September I imagine, in those days. With flower shows so frequent now in town and village, it would doubtless be of interest to know the date of the first recorded show in England. One writer in the *Floricultural Cabinet*, of 1839, describes himself as an exhibitor of Carnations for upward of 20 years. *J.*

THE LABOUR PROBLEM.—I should like to endorse all Mr. Pearson has written in his excellent letter on p. 37 on this question. There is no doubt the profits of the nurseryman and market gardener are rapidly dwindling, and, as the wages fund depends upon the profits, both the master and the workman must suffer. The whole object of our law-makers is to benefit the consumer only, and, if this insane policy continues, the producer in this country will cease to exist. This may take some time, as the British are a dogged race and will die hard. A friend near me, who sometimes assumes the mantle of the prophet, says in the future there will only be three classes in this country, viz., officials, who are in excess so alarmingly, pensioners, and paupers,

and that the cultivators of the soil, which ought to be the mainstay of the country, will be found under the last category. *B. Hobday, Cavendish Park Nursery, Cambridge.*

—We have had the editorial statement (p. 6) that "in few trades are the hours so long as in gardening, and in no trade is the remuneration so low." Mr. C. E. Pearson, speaking on behalf of nurserymen, says (p. 37), they would "be only too pleased to give their staff a higher remuneration if only the conditions of the trade would allow it." The nurseryman who sits waiting for Protection to come and make things better for him is lost, and the nursery hand who accepts this as an excuse for low wages and long hours is also lost. The nursery trade appears to be at least as prosperous in this country as it ever was. There are as many making fortunes at it as there are at any trade with which it may be reasonably compared, notwithstanding cheap French Roses, Belgian Grapes, Dutch bulbs and the assessors of taxes. I was once one of a large gang of trained young men who were paid 15s. for a 62 hours week by a nurseryman who made a big fortune. A better excuse than that offered by Mr. Pearson for low pay and long hours in nurseries and gardens generally is that plenty of men are to be had on the present terms. To use Mr. Pearson's boots as an illustration, if he can get them at 10s. 6d. why should he pay 21s. The Editor tells him he would find the higher-priced boots the cheaper in the end and more becoming, to which he replies, appearances notwithstanding, I cannot afford to pay more, at any rate until Protection comes. For my part, I think it is hopeless to ask employers to take the first step in this matter. In what calling have they ever done anything for the workers until they were forced? The shortage of men in America, referred to in the editorial article, is not likely to be experienced here. The tendency of wages to a minimum is certain where there are three men for two jobs, unless the men agree on a fixed price for their services, below which they will not go. This can only be done by following the example of workers in other industries, and forming a strong union of gardeners. Nurserymen and other employers will, of course, protest, but if we set to work in a business-like, earnest way, things will adjust themselves, as they have done in other industries, where the hours and wages of the employees have been improved 50 or 100 per cent., and generally to the advantage of the industry and the employer. Mr. Pearson's old catalogue prices prove nothing except that plants, like bread and tea, used to be dearer. But surely what we want is to see a condition of things that will make nursery stock cheaper still (much of it is far too dear at present), and this is to be brought about by skilled management and the employment of trained men paid fair wages and working a reasonable day. *W. W.*

—Your recent leading article (July 2) on this subject was very opportune, and it is well that attention should be drawn to the fact that "in few trades are the hours so long as in gardening, and in no trade is the remuneration so low." Is not the present unsatisfactory state of the nursery trade quite as much due to home competition and the cutting of prices among British firms as to any foreign competition such as suggested by Mr. Chas. E. Pearson? Notwithstanding the fact that some people, and particularly women, already grumble at having to pay 6d. for a good hardy plant, cannot an understanding be arrived at among nurserymen to raise the price of goods and thus put the business on a surer footing? They should then be better able to command more skilled labour, and young men would not so quickly enter trades where the pay and the conditions (except in regard to health) are better than is frequently the case with gardeners. Mr. C. E. Pearson fears "the new land taxes will hit the nursery trade harder than any other section of land-owners, owing to

their premises being usually situated in suburban districts." Like numerous other persons, your correspondent does not seem to realise that the small holder, occupying a holding not exceeding 50 acres or £50 in annual value, is specially exempted from any increment value duty, whether on agricultural or building values. This is how "agriculture" is defined under the new Act:—"The expression 'agriculture' includes the use of land as meadow or pasture land or woodland, or for market gardens, nursery grounds, or allotments, and the expression 'agricultural land' shall be construed accordingly." (Clause 27.) Having had some very varied experience as a rating surveyor, I also take exception to Mr. Pearson's complaint that "These hardships are accentuated by the fact that assessment committees always assess nursery land at double or treble its value." *H. Stuart Thompson.*

IRIS TINGITANA.—As Mr. Basil Levett says on p. 38, flowering bulbs of *Iris tingitana* break up into numerous small bulblets after flowering, but that is no reason why this *Iris* should not be grown extensively. Of course, if one only has the bulbs that flower, some years must elapse before the bulblets become large enough to flower again, but *Iris tingitana* should be treated in the same manner as *Lilium giganteum*, also referred to by Mr. Levett. An assortment of bulbs of different sizes should be procured. Some of these in both cases will probably flower the first year, but the others will grow on and will bloom in later seasons. As I described in my article on p. 16, all my large bulbs, which I depended on to flower, rotted off because they had been unintentionally covered with about a foot of soil, but 35 of a large colony of smaller bulbs, which were planted in another garden bloomed, though I had not expected them to flower for another year. It was these that were represented in the illustration. If a hundred bulbs of different sizes are obtained, some will come into flower every year, and no season should pass without this glorious *Iris* being in blossom. *Wynndham Fitzherbert.*

OXLIP.—It seems not improbable that Mr. Nicholson's objective and mine are different. I do not dispute the right of the botanists' *Primula elatior* to the word "elatior." My objection is to its usurpation of the old English designation of Oxlip, which belongs to the natural hybrid between the Primrose and Cowslip. If anyone has doubts regarding the bona fides of the Oxlip of the old writers, they ought to be dispelled by the unanimous agreement of a later group—the Rev. John Lightfoot, who has the Primrose, Cowslip and (hybrid) Oxlip as varieties of one species; Sir J. E. Smith, Dr. Hooker and their followers, who indisputably regard the hybrid as the true and only Oxlip. Darwin's may be cited as the greatest name among the moderns. In *Forms of Flowers*, he remarks, "The common Oxlip (not the *elatior* of Jacq.) is found almost everywhere in England where both Cowslips and Primroses grow;" and "Primula *elatior*, Jacq., or the Bardfield Oxlip, is found in England in only two or three of the eastern counties." At the Primula Conference in 1886, the late Dr. Hogg exhibited "The Bardfield Oxlip and Common Oxlip with seedlings," and in the collection from Kew were "a few forms of Oxlip, some of which were very curious." Were these "very curious" forms the offspring of Darwin's and Hogg's "Bardfield Oxlip" or of the "common"? And now may I point out that the fact of the Oxlip being known by other names, and as a Cowslip, and that other plants may have been called Oxlip is outside the question? The same can be said of the Cowslip, and of, perhaps, all very common or attractive "weeds." When on a visit in spring, a lady took me to see a mass of Wood Anemones, of which she remarked, "In Derbyshire we call them Ladysmocks." But that does not invalidate the right of *Cardamine pratensis* to the name as being peculiarly its own. On referring

to the late Mr. Leo. Grindon's *Shakespeare Flora*, and to Canon Ellacombe's *Plant Lore of Shakespeare* (all the editions), I find both authorities agree that the poet's Oxlip is the hybrid. P. elatior continues to be called Bardfield Oxlip by some folks, and were that the rule, there would be no confusion. R. P. Brotherston.

INCARVILLEA GRANDIFLORA.—Everyone knows that this showy plant opens its flower on quite short footstalks, which, after fertilisation, commence to lengthen until they are, as you will see from those sent, 20 inches high. Why does it do this? T. Smith, Newry.

SWEET WILLIAM PINK.—I appreciate the remarks of your correspondent Mr. Brotherston on my note on Sweet William Pink (see p. 64). I shall send him a complete specimen of flower and foliage as soon as my plants recover from the effect of recent rains. He will then be able to make a comparison, and will probably come to my opinion, that the plant I had described is not a form of *Dianthus barbatus* at all, it having the general appearance of a cross between *D. barbatus* and *D. chinensis*. Unless desired further, I need not repeat the offer of specimens to Messrs. Forbes, having sent a fully-grown plant some time ago to the late Mr. John Forbes, who replied at the time, as well as by subsequent conversation, that he had only seen the plant once before, and could not give any account of it, and I expect his son, Mr. Archibald Forbes, may still have the plant, as he was acquainted with the subject. Had my plant been common in Scottish gardens, those eminent specialists in Pinks would have recognised it at once. Last year I sent a specimen to Kew, and was favoured with a reply from the Director that it was one of the numerous varieties of *D. Caryophyllus*; however vague that may appear, I believe it is consistent with the rules of the Royal Botanic Gardens not to pay much attention to horticultural variations. It will be of much interest to have Mr. Brotherston's opinion later. *Dianthus chinensis* was first cultivated before 1713 by Mr. Thomas Fairchild (vide Aiton). He was a commercial gardener at Hoxton, and died in 1729, leaving funds for an annual sermon, which is still preached; the first two were published, and I succeeded a short time ago in procuring, for a small sum, for the present vicar, these eloquent orations on nature. Mr. Brotherston repudiates my statement that "Sweet John" and "Fairchild's Mule" are the same. If he will be good enough to refer to Miller's *Gard. Dict.*, 1748, vol. i., under *Caryophyllus*, he may read, "The double rose-coloured Sweet John or Fairchild's Mule." Seeing that Aiton, in *Index Kewensis*, 1812, associates *D. chinensis* with Fairchild, I conclude that the Sweet William Pink was the result of a cross of the two species aforementioned, as it bears a much greater affinity to such a parentage than the well-known Mule Pinks with narrow Carnation-like foliage and without the glaucous colouring. These common Mule Pinks were first raised at Angers, by M. Flon, from a supposed natural sport or crossing of *D. Caryophyllus* and *D. chinensis*, and contained in numerous varieties by Paré, Bonnet, and others. D. Napoleon III. is believed to be from the same origin. That numerous section is known in France as *D. semperflorens*, or *Éillet Flon*, and in the English trade as *D. multiflorus hybridus*. Mr. Douglas has some very interesting Mule Pinks from recent crossing. The seed of Brown's Mule Pink was in the trade in the early 'seventies, it probably originated at Slough, but I never succeeded in getting it to grow, and cannot describe it. J. Marison.

PHILADELPHUS.—Mr. Beckett in his interesting note on flowering shrubs (see p. 39) leaves out *Philadelphus Yokohama* (Satsuma), the best of the lot. There are specimens here over 15 feet high, drooped from the summit to the ground, masses of snowy beauty. I send a few sprays. T. Smith.

ORIGIN OF THE DOUBLE PRIMROSE.—The dropping of a line or two in my communication on this subject at p. 38 makes my reference to *Primula auriculæflora*, so-called, difficult to understand. What I wrote was, this Crimson Primrose was thrum-eyed, and that I used its pollen on a large, pin-eyed, single Primrose to create a strain of garden Primroses. A. Dean.

SOCIETIES.

ROYAL HORTICULTURAL Scientific Committee.

JULY 19.—Present: Mr. E. A. Bowles, M.A., F.E.S., F.L.S. (in the Chair); Messrs. J. T. Bennett-Poe, M.A., E. M. Holmes, F.L.S., W. Hales, J. Fraser, F.L.S., A. Worsley, J. Douglas, V.M.H., W. Fawcett, F.L.S., and F. J. Chittenden, F.L.S. (hon. sec.).

Saxifraga tellimoides.—Mr. FRASER showed a plant of *S. tellimoides* and commented upon its peculiarities. It is a native of Japan, and has affinities with the American *S. peltata* and with *S. Jamesii*, which is also American, but it agrees with none of the recognised sections completely. It is perhaps nearest the section *Isomeria*, but differs in the peltate leaves. This species was discovered by Maries in 1880, first flowered in this country in 1885, fertile seed being produced in 1892. It was put into commerce by Messrs. Vilmorin in 1897.

Seminal variation in Campanula lactiflora.—Mr. BOWLES showed seedlings of *Campanula lactiflora* having abnormally narrow leaves and very narrow petals, the corolla being cut almost to the base. One had blue flowers, and had been derived from a blue-flowering plant; the other bore white flowers, and had occurred near a clump of the white form. The variation was in the same direction as that seen in the variety of *C. rotundifolia*, known as *soldanelloides*.

Spiræa Aruncus.—Mr. BOWLES also showed a specimen of *Spiræa Aruncus*, bearing both staminate and hermaphrodite flowers. Up to the present only the staminate form had been known in his garden.

NOTTINGHAM HORTICULTURAL AND BOTANICAL.

JULY 19.—An interesting feature at this exhibition was the magnificent display of *Souvenir de la Malmaison* and other varieties of Carnation shown by Mr. ALLEN TATHAM, Nottingham, an amateur. For a bright and attractive group of plants bearing large flowers of exquisite quality, he was awarded a special Gold Medal. The beautiful arrangement of the group reflected great credit on the exhibitor. For another group of "Malmaisons" he was awarded a 1st prize and he gained three other prizes for cut blooms.

The best group of miscellaneous plants arranged in spaces not exceeding 200 superficial feet was exhibited by Mr. W. HASLAM, Chesterfield; Mr. W. A. HOLMES, Chesterfield, being 2nd, and Mr. W. VAUSE, Leamington, 3rd.

In the class for smaller groups, Mr. W. A. HOLMES won the 1st prize and Mr. VAUSE the 2nd prize.

The best stove and greenhouse plants were shown by Mr. W. VAUSE, and the best specimen of a stove foliage plant by Mr. W. VAUSE, who had also the best greenhouse plant. Messrs. MANSSELL & HATCHER, of Rawdon, Yorkshire, won the 1st prize for a collection of Orchids, and Messrs. T. WROTHERA & Co., Burton Joyce, a 1st prize for a display of Roses arranged on a table. The best collection of 24 Rose blooms, distinct varieties, was shown by Mr. J. LEAK, Beeston, and the best collection of 12 blooms by Mr. W. LOWE. There were fine collections of Sweet Peas, Carnations, Lilioms, Fuchsias, Gloxinias, Pelargoniums, Begonias, Caladiums, Ferns, Dracenas, and a considerable number of florists' arrangements of bouquets, button-holes, &c. Altogether the show, which was held in the beautiful grounds known as the Arboretum, was a distinct success, and the hon. sec. Mr. C. J. Mee is to be congratulated upon the result.

FORESTRY AT THE HIGHLAND SOCIETY'S SHOW.

JULY 19, 20.—In connection with the Dumfries Show of the Highland Agricultural Society, on July 19, 20, 21 and 22, a valuable section devoted to forestry was arranged by the Royal Scottish Arboricultural Society, this being more interesting than any made by the society at previous shows. From the Royal Scottish Arboricultural Society came a large collection of sections of the timber of British-grown trees and

shrubs, together with about 100 photo-micrographic slides of plant tissue. The GLASGOW AND WEST OF SCOTLAND COLLEGE OF AGRICULTURE sent a collection of forestry implements and instruments, together with timber and other specimens. Sir JOHN STIRLING MAXWELL, Bart, President of the Royal Scottish Arboricultural Society, exhibited notched Spruce planted on inverted turf to show the advantages of the method adopted by him on his estates; and other exhibits of considerable value were shown by his Grace the Duke of Buccleuch from his local estates; from the Rt. Hon. Sir HERBERT MAXWELL, Monreith (forester Mr. T. Sharpe); Earl of MANSFIELD, Comlongon (forester Mr. W. H. Whillans); E. J. BROOK, Esq., Hoddon (forester Mr. W. H. Cowan); and Major J. F. CARRUTHERS, of Dormont.

In the Competitive Section the entries were, as a rule, good, and the exhibits included several from the Duke of ABERCORN; the Duke of Buccleuch; the Duke of Roxburghe; the Marquis of GRAHAM; the Earl of MANSFIELD; Mr. G. F. BARBOUR, of Bonskied; Mr. J. E. KEIR, of Harviestoun Castle; Mr. W. J. HERRIES MAXWELL, of Munches; Mr. YOUNGER, of Benmore; and several foresters, including Mr. R. COWAN, Hoddon; Mr. A. LOWE, Lockerbie House; and Mr. W. H. WHILLANS, Comlongon.

The whole section interested the public, and showed the advance made in the study of forestry in Scotland in recent years.

BIRMINGHAM BOTANICAL AND HORTICULTURAL.

JULY 20.—Owing to the wet weather on the above date, the number of visitors at the annual Rose and midsummer flower show, held at the Botanical Gardens, Edgbaston, was below the average. Roses and Sweet Peas were well shown. During the afternoon a party of gardeners from Bath, who were visiting Birmingham, spent about two hours in the show and gardens.

Messrs. BASTOCK & SON, Woodbridge Road, Moseley, showed about 40 varieties of Violas in vases over a bed of moss. The effect was pleasing. A few of the best varieties were Peace, Ada Anderson, Moseley Perfection, Willie Farmer, Jeannie Houston, Moseley Purple, and Mrs. Chichester. (Bronze Medal.)

Mr. FRANK LILLEY, St. Peter's, Guernsey, had a nicely-arranged group of early-flowering Gladioli in tall stands and vases of various sizes. The varieties named Fairy Queen, Crimson Queen, General Scott, and formosissimus were much admired. (Bronze Medal.)

From THE LAPWORTH NURSERIES, Hockley Heath, came 26 varieties of Sweet Peas. (Bronze Medal.)

Mr. A. R. BROWN, Wychall Lane, King's Norton, had a group of Roses in tall stands, vases, and boxes. (Bronze Medal.)

The largest and most effective exhibit came from Messrs. GUNN & SONS, Olton, Birmingham, whose display of Roses comprised about a hundred popular and little-known varieties, arranged in bold stands, circular baskets, vases, &c. The various sections were represented, but the Teas, Hybrid Teas, Hybrid Perpetuals, and Rambler Roses were shown in the greatest numbers. The following varieties were exhibited in excellent condition:—Monsieur Paul Leda, Hon. Ina Bingham, Le Progrès, Lyon Rose (extra good), White Killarney, Pharisaer, Königin Carola, Princess Marie Mertschersky, Richmond, Mrs. Theodore Roosevelt, Frau Karl Druschki, and Mme. Melanie Soupert. On the orchestra at the end of the hall Messrs. GUNN had a collection of Phloxes, in which several new varieties were well shown. (Gold Medal.)

Mr. C. H. HERBERT, Hazelwood Road, Acock's Green, had a well-arranged group of hardy flowers, consisting principally of Delphiniums, Galegas, Pinks, Gaillardias, Iceland Poppies, and Aistromerias. (Silver Medal.)

Messrs. BAKERS, Wolverhampton, showed an extensive collection of Sweet Peas in splendid condition. Two large Cork arches and three tall Bamboo stands, each decorated with large, substantial flowers, formed a pleasing background. Varieties of outstanding merit were Lord Nelson, Gladys Unwin, Helen Pierce, Constance Oliver, Etta Dyke, Othello Spencer, Mrs. Charles Mander, Earl Spencer, Mrs. Charles

Foster, John Ingman, G. W. Kerr, The Marquis, and Catherine Macgowan. (Silver-gilt Medal.)

Messrs. ROBERT SYDENHAM, LTD., Tenby Street, Birmingham, showed good-quality Sweet Peas, beautifully arranged in rustic stands. (Bronze Medal.)

Mr. H. N. ELLISON, West Bromwich, contributed a collection of well-grown Ferns, consisting of varieties of *Nephrolepis*, *Adiantums*, *Gymnogrammas*, *Lastreas*, *Davallias*, *Pteris*, and *Selaginellas*. (Silver Medal.)

W. P. WILLCOX, Esq., Park Hill, Moseley (gr. Mr. A. Hartwell), sent a group of *Gloxinias* and double and single *Begonias*, interspersed with bright-foliaged plants.

In the classes provided for Roses, Sweet Peas, hardy herbaceous flowers, &c., the undermentioned exhibitors were the principal prize-winners:—Mr. F. JEFFERSON, Lapworth; Mr. E. DEAKIN, Hay Hall, Hay Mills; Mr. J. W. MEE, Harborne; Mr. F. W. BLOOD, Edgbaston; Mr. W. P. WILLCOX, Moseley; and Mr. H. ANDERSON, Shirley.

AWARD OF MERIT.

Viola Moseley Perfection.—A strong-growing variety, with large, flat, deep-yellow flowers. Shown by Messrs. BASTOCK & SON, Moseley.

RAYLEIGH AND DISTRICT HORTICULTURAL.

JULY 20.—This society held its ninth annual show on the above date, and, as regards the number and quality of the exhibits, it may be regarded as satisfactory, but the weather in the afternoon was unfavourable. The amateurs' and cottagers' classes were well filled, the exhibits being for the most part of good quality and staged to advantage. Messrs. E. BOYES, W. DODD, C. J. BARNARD, W. A. VOSS, Miss FRANCIS and Mrs. VICKERS were the most successful exhibitors in the amateur classes, and Messrs. G. WOOD, B. G. CHIPPINGTON, and W. DENYER in the cottagers' classes. In the classes open to gentlemen's gardeners, JAMES TABOR, Esq., J.P., The Lawn, Rochford (gr. Mr. J. Burle), and Mrs. MILLAR, Leigh-on-Sea (gr. Mr. A. Epps), were the most successful competitors, taking four 1st and two 2nd prizes each. In the open classes, Mr. BURLE was the most successful exhibitor, winning the 1st prize for a capitally-arranged group of miscellaneous plants, 1st prize for a collection of fruit, and a similar award for a collection of vegetables. Mr. E. JACKSON, of Rochford, was 1st for 18 H.P. and H.T. Roses (distinct varieties) and for 12 Tea Roses (distinct); Mr. EPPS won the 1st prize for hardy flowers, and Mr. W. A. VOSS was 1st for six tuberous-rooted *Begonias*, staging well grown and capitally flowered plants of good varieties.

In the ladies' classes (table decorations), &c., Miss A. M. BARNARD, Miss EPPS, Miss BLYTH, Miss BARNES, and Miss CORK won the chief prizes. Miss BARNARD's 1st prize dinner-table arrangement consisted of Sweet Sultan (*Centaurea rosea*) and *Gypsophila elegans grandiflora alba*, with a few sprays of Fern placed on the white ground round the individual glass stands.

NON-COMPETITIVE EXHIBITS.

These were contributed by Mr. HAROLD BROWN, Clemence Hall Nursery, Hawkwell, near Rochford; Mr. WALTER ESLEA, Danecroft Rosary, Eastwood, near Southend-on-Sea; and Mr. RUSSELL, The Essex Nurseries, Brentwood. Mr. BROWN's exhibit consisted of choice Roses, which were shown well by this exhibitor, and by Mr. ESLEA, who had also a fine exhibit of hardy flowers; Mr. RUSSELL's exhibit consisted mainly of hardy flowers.

YORKSHIRE SWEET PEA.

JULY 20, 21.—The second annual show of this promising society was held at Beverley. In spite of the recent trying weather experienced in the northern counties the entries were equal to those of the previous year, whilst the quality of the blooms and the staging of them showed a marked improvement. The general arrangements of the show reflected great credit on the secretary, Mr. H. G. Sumpner.

It is proposed another year to hold the show in Hull or some such large centre should a committee be forthcoming.

The Silver Cup presented by A. Stanley Wilson, Esq., M.P., for 18 varieties, distinct (open to all), was won by W. B. GAUTBY, Esq., who had some very fine flowers of Audrey Crier, Etta Dyke, Princess Victoria, Frank Dolby, Syeira Lee, John Ingman, Marquis, Althorp Cream, Countess Spencer, Asta Ohn, Evelyn Hemus, Helen Lewis, Apple Blossom, Spencer, Black Knight, "Maiden's Blush," Imp, Prince of Wales, Marie Corelli, and Sybil Eckford.

H. SHERNBORNE, Esq., Howden, won the 2nd prize with a good lot of flowers.

The Open Class for 12 bunches, distinct, was won by G. COTTAM, Esq., Cottingham.

One of the features of the show was the open classes for single bunches.

For the best bunch of White Mr. M. STATHER, Cottingham, took 1st place with a grand vase of Nora Unwin; the best bunch of a Picotee-edged variety was Evelyn Hemus shown by Dr. ROY APPLETON; the best blush, Constance Oliver, shown by G. COTTAM; the best striped, flaked, or marbled variety was Yankee; the best pink shade, Bolton's Pink; the best lavender, Frank Dolby; the best scarlet, Geo. Stark; the best rose or carmine, John Ingman; the best maroon, Douglas Unwin; the best buff, Clara Curtis; mauve or heliotrope, Marquis; the best orange, Helen Lewis; the best bi-color, A. Ireland.

The class for six varieties did not bring forth much competition, but the Silver Cup was deservedly gained by Dr. ROY APPLETON; with splendid blooms of John Ingman, Princess Victoria, Maroon Paradise, Zero, Lavender George Herbert, and Elsie Herbert.

The Certificate of Merit, awarded by the National Sweet Pea Society, was given to a vase of Castlethorpe Beauty (said to be an improved Mrs. H. Sykes), shown by W. B. GAUTBY, Esq., Brigg.

The Silver Medal of the National Sweet Pea Society offered for the best vase in the Amateurs' Section was won by Mr. J. S. HARPER, York, with Elsie Herbert.

The handsome Silver Gilt Medal, presented by Messrs. Dobbie & Co. for the most successful exhibitor, was won by Mr. STATHER, Cottingham.

NON-COMPETITIVE EXHIBITS.

Dr. ROY APPLETON showed *Gloxinias*, *Begonias*, &c.; Mr. FRANK GOULDING, Beverley, Border Carnations; Mr. J. R. LANE, Roses and Violas; Messrs. DOBBIE & Co., Edinburgh, a collection of Sweet Peas; Sunproof Crimson, Edrom Beauty, and Mrs. Hugh Dickson received First-class Certificates, and Messrs. DOBBIE received a Medal for the best trade exhibit. Messrs. E. P. DIXON & SONS showed a neatly-arranged exhibit of Carnations, early-flowering *Gladioli*, foliage plants, and some floral decorations.

LIVERPOOL HORTICULTURAL.

JULY 20, 21.—The Rose and Sweet Pea show was held at the Corn Exchange, the Sweet Peas being excellent and the Roses, although showing the effects of bad weather, were an improvement upon the empty benches of last year. Hardy flowers were shown well.

SWEET PEAS.

For twenty distinct varieties Dr. G. E. PHILLIPS, Malpas (gr. Mr. W. Davies) won the 1st prize with an excellent assortment, including Asta Ohn, Dazzle, Tom Bolton, Nancy Perkin, &c.; GEO. H. F. ROBERTSON, Esq. (gr. Mr. E. Jones), Gresford, was 2nd.

For twelve distinct varieties Geo. H. F. ROBERTSON, Esq., led, having good flowers of Othello, King of the Blues, &c.; P. H. ASHWORTH, Esq. (gr. Mr. W. H. Shon), Gresford, was 2nd.

The best collection of twelve varieties with waved standards was shown by Dr. G. E. PHILLIPS, who had the varieties Dazzler, Mrs. Hugh Dickson, and others. The best bunch of Sutton's Queen was shown by Mr. ROBERTSON.

In the Amateurs' Section the best twelve varieties came from Mr. W. BINDLOSS, Formby.

ROSES.

In the competition for the best collection of 18 Hybrid Teas, G. H. F. ROBERTSON, Esq., won the 1st prize, and he had fine blooms of Caroline Testout, Mildred Grant, Killarney, &c. Mr.

ROBERTSON had also the best collection of 18 blooms.

For twelve blooms, distinct, A. E. GUNSON, Freshfield, was the most successful exhibitor.

Mr. ROBERTSON had the best collection of six blooms.

In the Amateurs' Section Mr. C. HACKING won the 1st prize for twelve blooms, and Mr. H. BROWNHILL for six blooms.

CARNATIONS.

The best exhibit of six Carnations or Picotees, three blooms of each, came from PERCY CORNELIUS, Esq.; he had good blooms of Hesperia, and Agnes Sorrel; 2nd CHAS. ALCOCK, Esq., (gr. Mr. C. Russell); the best collection of twelve blooms, distinct, was shown by PERCY CORNELIUS, Esq.

NON-COMPETITIVE EXHIBITS.

Gold Medals were awarded to Messrs. BREADMORE, Winchester, and H. MIDDLEHURST, Liverpool for Sweet Peas; ALEX. DICKSON & SONS, Newtownards, W. ROWLANDS, Wavertree, and R. MANSON, Gateacre, for Roses; W. CONWAY & SONS, Halifax, and DICKSONS, Chester, for herbaceous cut flowers; R. P. KER & SONS, Liverpool, plants, fruits, and vegetables; W. L. PATTISON, Shrewsbury, Pansies and Violas; and Messrs. YOUNG, West Derby, for Carnations. Silver Medals were awarded to Messrs. THOS. DAVIES & Co., and BEES, LTD., Liverpool, for cut flowers.

DUNFERMLINE.

JULY 21, 22.—Why is this show rapidly becoming one of the best shows in Scotland? It is held by the Carnegie Dunfermline Trust, and besides having plenty of money behind it, it has also plenty of enthusiasm, concentrated largely in the personality of the convener and secretary of the Trust's horticultural committee, Mr. John Hynd. Three popular classes of flowers are very specially encouraged—Roses, Sweet Peas and Pansies. In fact, the Pansy competitions are now the most important in this country. To give some idea of the display, we print below the number of entries in the leading classes.

ROSES (open to all).

The Carnegie Championship prize for 52 cut Roses, single blooms, not fewer than 36 distinct varieties (3 entries).—1 (£10), HUGH DICKSON, Belfast; 2 (£7 10s.), R. HARKNESS & Co., Hitchin; 3 (£5), D. & W. CROLL, Dundee; 4, (£2 10s.), ROBERT FERGUSON, Brucefield, Dunfermline.

Thirty-six cut Roses, single blooms, not fewer than 18 distinct varieties (9 entries).—1 (£4 10s.), HUGH DICKSON; 2 (£3), R. HARKNESS & Co.; 3 (£2), D. & W. CROLL.

Twenty-four cut Roses, single blooms, distinct varieties (10 entries).—1, HUGH DICKSON; 2, D. & W. CROLL; 3, R. HARKNESS & Co., 4, W. FERGUSON.

Twenty-four cut Roses, eight sorts, three blooms of each (8 entries).—1 (£3), HUGH DICKSON; 2 (£2), R. HARKNESS & Co.; 3, D. & W. CROLL; 4, W. FERGUSON.

Twenty-four cut Roses, single blooms, Tea or Noisette, not fewer than 12 distinct varieties (9 entries).—1 (£3), HUGH DICKSON; 2, D. & W. CROLL; 3, SMITH & MELDRUM, Forfar; 4, R. HARKNESS & Co.

Display of Roses, space not to exceed 12 feet by 6 feet; Rose foliage only allowed for decoration.—1 (£7), W. FERGUSON; 2 (£5), R. FERGUSON.

Fifteen vases, distinct varieties, garden or decorative Roses, not fewer than three trusses of each; to be arranged on three tiers.—1, R. FERGUSON; 2, W. FERGUSON; 3, J. FAIRLEY & Co.

PANSIES AND VIOLAS (open to all).

Forty-eight blooms Fancy Pansies, distinct varieties (10 entries).—1, CHARLES KAY, Mill Farm, Gargunnoch; 2, ANDREW FRATER, Linlithgow; 3, CHARLES COCKBURN, Pencarthland; 4, JAMES PAUL, Killearn.

Twenty-four blooms Fancy Pansies, distinct varieties (16 entries).—1, JAMES PAUL; 2, CHARLES KAY; 3, ROBERT DUNSIRE, Avonbridge; 4, ANDREW FRATER.

Twenty-four blooms Show Pansies, distinct varieties (14 entries).—1, ANDREW FRATER; 2,

MATTHEW WALLACE; 3, JAMES PAUL; 4, JAMES SMELLIE, Busby.

Twenty-four blooms *Violas*, distinct varieties (18 entries).—1, ROBERT DUNSIRE; 2, ANDREW FRATER; 3, MATTHEW MILLIGAN, Wishaw; 4, JAMES PAUL.

Gardeners and amateurs.—Twelve Fancy Pansies, distinct varieties (31 entries).—1, ANDREW FRATER; 2, CHARLES KAY; 3, ROBERT HUNTER, East Kilbride; 4, JOHN M'LAUGHLAN, Gargunnoch.

Twelve Show Pansies, distinct varieties (22 entries).—1, ANDREW FRATER; 2, JOHN HENDERSON, Fauldhouse; 3, MATTHEW WALLACE; 4, JOHN DOUGLAS, Uphall.

Twelve blooms *Violas*, distinct varieties (33 entries).—1, JOHN DOUGLAS; 2, ANDREW FRATER; 3, ROBERT DUNSMORE; 4, ROBERT HUNTER.

Good prizes were also given for Sweet Peas, herbaceous flowers and Carnations. Messrs. DOBBIE & Co., Edinburgh, were awarded a Gold Medal for a fine stand of Sweet Peas and Pansies, and Mr. WM. ANGUS, Penicuik, a Silver Medal for a table of Carnations.

DURHAM, NORTHUMBERLAND AND NEWCASTLE-ON-TYNE BOTANICAL AND HORTICULTURAL.

JULY 20, 21.—This show was held on these dates at Newcastle. Unfortunately, the recent strike of railway servants prevented a number of exhibits reaching their destination, but, nevertheless, the general quality was very high. The groups arranged for effect on spaces 25 feet by 12 feet brought four competitors. Mr. A. E. BAMBRIDGE, Lynwood, Jesmond, Newcastle-on-Tyne (gr. Mr. T. Bell), easily won the 1st prize for a group containing *Codiaeums* (Crotons) in excellent condition, whilst the arrangement of the Orchids and other flowering plants was very effective. Mr. H. H. HILLIER, Green Park Gardens, Darlington, was 2nd. In Mr. HILLIER's group *Roses* and flowering plants were prominent features, but the general arrangement was thin. Messrs. CARNEGIE & Co., Newcastle, were placed 3rd, and Mr. G. W. PINKNEY, Brookfield Gardens, Stockton-on-Tees, 4th.

In Class 2, for six plants in bloom, the pitmen showed their plants in fine condition. Mr. J. ELLISON, Cramlington, Northumberland, was awarded the 1st prize. In the back row was a fine specimen of *Clerodendron Balfourii* 5 feet in diameter, profusely flowered, the other plants being *Clerodendron fallax*, *Dipladenia amabilis*, *Allamanda Hendersonii*, *Anthurium Scherzerianum*, and another. Messrs. R. ARTHUR & J. HARRISON were 2nd, and they showed finely-flowered plants of *Stephanotis*, *Statice*, and *Bougainvillea*, amongst others.

In the class for four plants in bloom, Mr. ELLISON was again 1st. *Clerodendron fallax* and *Allamanda* were especially fine. Messrs. ARTHUR & HARRISON were 2nd.

For a group of Carnations, Mr. W. LAWRENSEN, Newcastle, was 1st, with a neatly-arranged group; Mr. D. MARSHALL, Yarm, being 2nd.

For six table plants, Mr. T. BILL was 1st, Mr. H. H. HILLIER 2nd, and Messrs. ARTHUR & HARRISON 3rd.

The best exhibit of four tuberous-rooted Begonias was shown by G. LYALL, Esq., Binton (gr. Mr. E. Brough), who was awarded the 1st prize.

In Class 7, for 48 *Roses*, distinct, Mr. HUGH DICKSON, Belfast, beat all competitors, the varieties *Lyon*, *Mrs. Miles Kennedy*, *Mildred Grant*, *J. B. Clark*, and *Dean Hole* being especially fine. Messrs. G. GIBSON & Co., Bedale, were 2nd.

In the class for 24 *Roses*, in 12 distinct varieties, Mr. HUGH DICKSON was 1st, and WALTER LACEY, Esq., Gosforth, 2nd.

Mr. HUGH DICKSON was also 1st for 12 distinct varieties; and Messrs. GIBSON & Co. 2nd.

For 12 *Roses* of any variety, Mr. HUGH DICKSON was 1st, with fine flowers of the variety *Mrs. E. Mawley*. Mr. PARK, Askew Mill, was 2nd, with *Mrs. J. Laing*.

For 18 bunches of Sweet Peas, the Right Hon. Sir G. O. TREVELYAN, Bart., Wallington Hall, Cambo, Northumberland (gr. Mr. E. Keith), was 1st, with a grand stand, in which the colours were finely blended. Tom Bolton, J. Ingman, St. George, *Mrs. H. Sykes*, *Queen Alexandra*, and *Elsie Herbert* being especially fine. Mr. T. BELL, Whitley Bay, was 2nd, and Messrs. LONGSTER & Sons 3rd.

For three bunches, Mr. KEITH was again 1st, and Mr. JARVIS, Northallerton, 2nd.

For 12 bunches of hardy flowers, Messrs. HARKNESS & Sons, Bedale, were 1st, Messrs. GIBSON & Co. 2nd, and Messrs. LONGSTER & Sons 3rd.

For a collection of Carnations, Mr. W. LAWRENSEN was deservedly awarded the 1st prize, being the only exhibitor.

In the classes for eight dishes of fruit, J. E. HATHAWAY, Esq., Baldersby Park (gr. Mr. J. Brennan), was awarded the 1st prize. The Muscat of Alexandria and Black Hamburgh Grapes were excellent, and Royal George Peach and Brown Turkey Figs were the best of the other dishes shown. 2nd, the Right Hon. Lady BEAUMONT, Carlton Towers, Yorkshire (gr. Mr. Nicholls).

In the open class for four dishes of fruit, Mr. HATHAWAY was 1st and Mr. NICHOLLS 2nd.

For a dinner table arranged with flowers and fruit for effect, Mr. G. E. HILLIER was 1st, and Mrs. BATTENSBY, Blayton, 2nd.

The best exhibit of bunches of Grapes was shown by Lady BEAUMONT, the varieties including Madresfield Court and Muscat of Alexandria. 2nd, H. B. WATSON, Esq. (gr. Mr. W. Ferguson).

For two bunches of white Grapes, Mr. T. BELL was 1st, with Buckland Sweetwater.

For two bunches of Black Hamburgh, Mr. G. SHOTTON was 1st, and Earl GREY, Howick (gr. Mr. W. Lambert), 2nd.

For two bunches of black Grapes, any other variety, Mr. J. R. GARDINER won the 1st prize with finely-finished fruits of Madresfield Court.

In the competition for Messrs. Webb & Son's prizes for the best collection of Vegetables, Mr. T. H. BOLTON, Powderham Castle Gardens, Devon, was 1st, and Mr. E. KEITH 2nd.

For Messrs. Sutton & Son's prizes for Vegetables, Mr. T. H. BOLTON was again 1st, and Mr. NICHOLLS 2nd.

Among the non-competitive exhibits Messrs. SUTTON & SONS had a grand display of flowers, fruit and vegetables. (Gold Medal.) Mr. JOHN FORBES, Howick, made a grand display of Phloxes, Delphiniums, Pentstemons, *Violas*, and Carnations. (Gold Medal.) Messrs. STUART & MEIN, Kelso, exhibited perpetual-flowering Carnations, and herbaceous and Alpine plants in variety. Mr. F. J. BELL, Whitley, had a fine display of *Violas*, Sweet Peas, &c. Messrs. G. GIBSON & SONS, Bedale, showed hardy flowers, *Roses*, &c. The TYNESIDE SEED STORES, Newcastle, had a choice collection of tuberous-rooted Begonias. Messrs. MICHIE & Co., Alnwick, showed Conifers, Acers, and hardy flowers in variety. Mr. W. LAWRENSEN, Newcastle, had a fine display of Ferns, pot *Roses*, *Pelargoniums*, and hardy cut flowers. (Gold Medal.) Messrs. J. THOMPSON & SONS, Forest Hall, showed *Roses*, *Pelargoniums*, Ferns, &c. Mr. H. INNIS, Croft Spa, Darlington, had a fine group of Orchids, arranged with *Caladiums* and Ferns. Messrs. ORD BROS., North Shields, had a miscellaneous display of Ferns, Palms, foliage and flowering plants. Mr. O. R. LAMB, Gosforth, showed Bays and other foliage plants.

NATIONAL CARNATION. (SOUTHERN SECTION.)

JULY 26.—The thirty-fourth exhibition of this Society was held in the Royal Horticultural Hall, Westminster, and, despite the untoward season, it was a very fine show. The competition was good in most of the small classes, but in the first division it was merely a duel between two exhibitors. For future shows, it should be pointed out that a few tall Palms for the table would greatly improve the general effect.

In the class for eighteen dressed blooms, Flakes and Bizarres, there were two competitors, Mr. JAS. DOUGLAS, Great Bookham, winning the 1st prize with a fine, even display. The varieties were *J. D. Herschell*, *Meteor*, *Admiral Curzon*, *Recorder*, *Sportsman*, *Sarah Payne*, *Geo. Melville*, *Peter Pan*, *Arthur*, *Rowena*, *Master Fred*, *Torchlight*, *J. S. Hedderley*, and *Gordon Lewis*. Mr. CHAS. BLICK, the Warren Nurseries, Hayes, was 2nd. The best of his flowers were *Deanston*, *Cleopatra*, *Emigrant*, *Opella*, *Claude Lorraine*, and *Hestra*.

For 18 *Sels* in not fewer than twelve varieties, Mr. JAS. DOUGLAS was awarded the 1st prize for a beautiful stand. The varieties employed were *Daffodil*, *Caruso*, *Kate Nickleby*, *Cardinal*, *Bob*

Acres, *Queenie*, *Ruby*, *Mrs. R. Gorton*, *Mrs. Parton*, *Mrs. Henwood*, and *Mrs. G. Jones*. Mr. CHAS. BLICK followed with a stand of larger flowers, but they were not dressed quite so well. His best blooms were *Maharajah*, *Elizabeth Schiffner*, *Lady Bury*, *John Knox*, *Attraction*, and *Black Douglas*.

The class for eighteen Fancy varieties contained two very fine exhibits, Mr. CHAS. BLICK turning the tables on Mr. JAS. DOUGLAS by winning the 1st prize. His varieties were *Donald McDonald* (very fine), *The Marquis*, *Vandyck*, *Dauntless*, *Skirmisher*, *San Remo*, *Bombardier*, *Pasquin*, *Prince Albert*, *Leslie*, *Lieut. Shackleton*, *Arabella Stuart*, *Outlaw*, *Medusa*, *Prince Arthur*, *Victory*, and *R. Morton*. In Mr. DOUGLAS's stand the finest flowers were *Mrs. Penton*, *Cassiope*, *Dido*, *Linkman*, and *Queen Eleanor*.

There were but two competitors for 18 white-ground Picotees, Mr. J. DOUGLAS again winning the 1st prize, with beautiful examples of *J. Smith*, *Amelia*, *Miss Cartwright*, *Mrs. Twist*, *Lena*, *Ganymede*, *Harry Kenyon*, *Amy Robsart*, *Thomas William*, *Brunette*, *Fortrose*, *Mrs. Sharp*, *Favourite*, *Little Phil*, and *Clementine*. Mr. BLICK followed with the following varieties as his best flowers, *Lucrece*, *Bobby*, *Patty Oliver*, *Lucy Labouchere*, and *Free Lance*.

The yellow-ground Picotees were exceedingly good, and Mr. JAS. DOUGLAS was again the best exhibitor, with such varieties as *Margaret Lemon*, *Onward*, *Her Majesty*, *Ophir*, *Cymbeline*, *Togo*, *Lady Freemantle*, *Exquisite*, *Lady Galton*, *Styx*, *Archie Brown*, and *Goblin*. Mr. CHAS. BLICK, who followed, had good examples of *Mark Twain*, *Amy Charles*, *Daisy Boston*, *Her Majesty*, and *F. W. Goodfellow*.

The flowers in the undressed division, which were displayed in vases, were certainly more effective than those on the boards.

For six vases, three blooms of each variety, Mr. JAS. DOUGLAS won the 1st prize for well-displayed flowers of *Mrs. R. Berkeley*, *Agnes Sorrel*, *Daffodil*, *Mrs. T. E. Henwood*, *Mrs. Griffiths Jones*, and a scarlet seedling. Mr. CHAS. BLICK was 2nd with good examples of *Lady Bury*, *Maharajah*, and *Miss Willmott*.

In the class for six vases of Fancy varieties Mr. DOUGLAS repeated his former successes with very fine flowers. His varieties were *Alice Byron Stuart*, *Gloriosa*, *Mrs. Penton*, *Liberté*, *Lord Steyne*, and *Queen Eleanor*; Mr. CHAS. BLICK was 2nd.

The yellow-ground Picotees still found Mr. J. DOUGLAS in the front; he staged good vases of *Margaret Lemon*, *Ophir*, *Onward*, and *Santa Claus*. In Mr. C. BLICK's vases were noted *Lady Godiva*, *John Ruskin*, and *Her Majesty*.

For 12 varieties, to include *Sels*, *Fancies*, and yellow-ground Picotees, Mr. JAS. DOUGLAS led off with a fine display. The varieties were *Kate Nickleby*, *Margaret Lemon*, *Renown*, *Onward*, *Mrs. R. Berkeley*, *Alice Byron Stuart*, *Ruby*, *Togo*, *Lord Steyne*, *Gloriosa*, *Daffodil*, and *Liberté*. Mr. CHAS. BLICK was a capital 2nd, with *R. Morton*, *Victory*, *Vandyck*, and *Dauntless* as his best flowers.

The competition in the second division was considerable. For 12 Bizarres and Flakes, Mr. H. R. TAYLOR, Cheam, Surrey, was most successful, his flowers being well-grown and well-dressed specimens. The varieties were *Bedouin*, *Gordon Lewis*, *G. Moreland*, *Torchlight*, *Merton Trio*, *J. S. Hedderley*, *Geo. Melville*, and two seedlings. Messrs. PHILLIPS & TAYLOR, Bracknell, were 2nd, with good examples of *J. S. Hedderley*, *Isolde*, *Hall Caine*, and *Gordon Lewis*.

In a similar class for *Sels*, Mr. H. R. TAYLOR won the 1st prize with excellent flowers of *Caruso*, *Splendour*, *Snowflight*, *Luda Malta*, *Cardinal*, *W. G. Parton*, *Carabas*, *Maud Allan*, and *Mrs. Eric Hambro*. The 2nd prize went to Mr. H. MATHIAS, Stubbington, who had good flowers of *Carabas*, *Cain*, *Snowball*, and *Daffodil*. Messrs. PHILLIPS & TAYLOR were 3rd.

In the Fancy varieties, Mr. H. MATHIAS won the 1st prize, the varieties employed being *Linkman*, *Liberté*, *Hecla*, *Daniel O'Connor*, *Devonian*, *Father O'Flynn*, and *Mars*. Mr. C. WALL, Bath, was 2nd, with fine flowers of *Ino*, *Sbright*, *Hercules*, and *Lord Steyne*. Mr. W. SYDENHAM, Melbourne, was a good 3rd.

For 12 white-ground Picotees, Mr. H. R. TAYLOR led off, with *Queen of Spain*, *Dora Bright*, *Little Phil*, and *Mrs. Sharp* as the best examples. Mr. W. SYDENHAM was 2nd, with examples of *Mrs. W. Twist*, *Blink Bonny*, *Miss*

E. Cartwright, and Ganymede. Mr. H. MATHIAS was 3rd.

The competition for 12 yellow-ground varieties was good. Mr. H. MATHIAS winning the 1st prize with Goblin, Togo, Gloria, Lady Constance, and Lady Halford. Mr. W. SYDENHAM was 2nd, and Mr. C. WALL occupied the 3rd position. The undressed flowers were arranged in vases. For four varieties, three blooms of each, in the Self section, Mr. H. R. TAYLOR staged some fine flowers. His varieties were Sultan, Cardinal, Miss Willmott, and Lady Walton. Mr. H. MATHIAS was 2nd, and Mr. R. MORTON, Woodside Park, 3rd. There were nine entrants. In a similar class for Fancies, the competition was again good, Mr. R. MORTON winning the 1st prize for well-displayed vases of Lord Steyne, Erl King, R. Buchanan, and Richness. Mr. G. R. TAYLOR was 2nd, with R. Buchanan and Carnival in good form, while Messrs. PHILLIPS & TAYLOR were 3rd.

The yellow-ground Picotees were not so strongly represented. Mr. H. R. TAYLOR was awarded the 1st prize. He had vases of Ophir, Santa Claus, Onward, and Lady Halford, while the other prizes went to Messrs. H. MATHIAS and W. SYDENHAM in the order named.

In the class for nine vases of Selfs, Fancies and yellow-ground Picotees, Mr. H. R. TAYLOR secured the 1st prize with fine vases of Lord Steyne, Anne Hathaway, Miss Willmott, Ophir, R. Buchanan, Mrs. E. Hambro, Solomon, and Onward. Mr. H. MATHIAS was a capital 2nd, having good, clear flowers of Libra, Daffodil, Pasquin, and Sam Weller. Mr. R. MORTON was 3rd.

In the third division, Mr. G. D. FORD, Acocks Green, was 1st for six dressed flowers of Flakes and Bizarres, with the following varieties: C. H. Herbert, Sportsman, Meteor, R. G. Rudd, Master Fred, and Ophelia. Mr. C. LINZEE, Arlesford, was 2nd.

For six Selfs, Mr. G. D. FORD won the 1st prize with bright, clean flowers, Mr. C. ALCOCK, Liverpool, being 2nd. In the class for six Fancies, Mr. C. LINZEE was 1st with good examples of Pasquin, Sam Weller, Linkman, and Orlando; Messrs. C. ALCOCK and G. D. FORD were 2nd and 3rd respectively.

SINGLE VARIETIES.

For a pink or rose-coloured Self, Mr. C. ALCOCK was 1st with a fine vase of Lady Hermoine; Mr. E. J. PRICE, Bournville, being 2nd with Camilla. The best white Self was shown by Mr. C. ALCOCK in Sir Galahad. In the darker varieties, Mr. E. J. PRICE won 1st honours with Ashantee, whilst Mr. C. A. LINZEE was 1st in the yellow class with Daffodil. The scarlet varieties were very effective, Mr. C. A. LINZEE being awarded the 1st prize for a fine vase of Brigadier. The yellow-ground Fancy varieties proved an extra strong class, Mr. C. ALCOCK won the 1st prize with Lord Steyne; Mr. JAS. FAIRLIE was 2nd with R. Buchanan. The class for Fancies, other than yellow-grounds, was awarded Mr. C. A. LINZEE for Ino Sebright, while Mr. W. FAIRLIE followed with Millie. Mr. C. ALCOCK won the 1st prize for Selfs, showing Duchess of Wellington.

The "Martin Smith" Cup class for 12 varieties, three blooms of each, staged in vases, proved a most attractive class. Mr. H. R. TAYLOR, however, secured the coveted award with excellent examples of Lord Sefton, Ophir, Duchess of Wellington, Cardinal, R. Buchanan, Sultan, Miss Willmott, Snowflight, Maud Allan, Carnival, Togo, and Erl King; Mr. R. MORTON followed with good, clean vases of Lord Steyne, Daffodil, Cardinal, and Togo.

The open classes for a vase of nine blooms of one variety in the various sections produced a splendid display, and Mr. DOUGLAS won all but one class. The best pink or rose Self was Miss Willmott; the best yellow variety, Daffodil; red or maroon Self, Agnes Sorrel; white, T. E. Henwood; scarlet, Cardinal; terra-cotta shades, Mrs. Griffiths Jones, and yellow-ground Fancy, Pasquin. The class for a yellow-ground Picotee was won by Mr. H. R. TAYLOR with Ophir.

TABLE DECORATIONS.

There were only two exhibits of table decorations. Mr. A. ROBINSON, Carshalton, won the 1st prize with a delicate arrangement of yellow Carnations, while Mr. E. J. PRICE won the 2nd prize with an arrangement of pink varieties, with delicately-arranged foliage.

PREMIER FLOWERS.

The premier flowers in the dressed section were yellow-ground Picotee John Ruskin, from Mr. C. C. WALL; heavy-edged yellow-ground Picotee Her Majesty, from Mr. CHAS. BLICK; light-edged, white-ground Picotee, Thomas William, from Mr. H. R. TAYLOR; heavy-edged white-ground Picotee Seedling 200, from Mr. H. R. TAYLOR; Fancy variety Leslie, from Mr. CHAS. BLICK; Self variety Maud Allan, from Mr. H. R. TAYLOR; Flake, Torchlight, from Mr. H. R. TAYLOR; Bizarre, Master Fred, from Mr. D. WALKER. The premier undressed flowers were light-edged yellow-ground Picotee John Ruskin, from Mr. CHAS. BLICK; heavy-edged yellow-ground Picotee Her Majesty, from Mr. CHAS. BLICK; Fancy variety R. Morton, from Mr. C. BLICK; and Self variety Daffodil, from Mr. JAS. DOUGLAS.

The "Cartwright" Challenge Cup was awarded for the third time to Mr. JAS. DOUGLAS; while the "Martin Smith" Challenge Cup was secured by Mr. H. R. TAYLOR.

The Divisional cups for the highest aggregate number of points were awarded to Mr. JAS. DOUGLAS, in Division I., and Mr. H. R. TAYLOR in Division II. A third cup was received by Mr. ALCOCK, while the fourth went to Mr. J. H. LINNINGTON.

HONORARY EXHIBITS

Messrs. W. CUTBUSH & SON, Highgate, arranged a fine group of Carnations in tall vases, with Palms, Bamboos, and appropriate foliage; Mr. CHAS. TURNER, Slough, had an effective group of border varieties in pots, bedded with Pteris Ferns; Messrs. J. PLED & SON, West Norwood, also arranged a group of Carnations; Messrs. S. LOW & CO., Bush Hill Park, had a large exhibit of Roses; while Messrs. G. & A. CLARK, Dover, staged a table of hardy flowers; as did also Messrs. BARR & SONS, Covent Garden, their collection of Phloxes being very fine. From Messrs. H. B. MAY & SONS, Upper Edmonton, came a fine exhibit of Ferns and Campanulas. Messrs. PHILLIPS & TAYLOR occupied a table with Carnations, hardy flowers, and some attractive Nymphaeas.

LAW NOTE.

HERBERT STANLEY.

THE Official Receiver for the Edmonton district has issued particulars with respect to the failure of Herbert Stanley, formerly known as Herbert Stanley Mobbs, of 15, Palmerston Crescent, Bowes Park, Middlesex, lately residing at Salcombe, Bowes Road, Palmer's Green, Middlesex, Orchid importer, from which it appears that the debtor has filed a statement of affairs showing unsecured liabilities amounting to £5,902 6s. 6d. and assets nil. The debtor alleges his failure to have been caused through agreeing to pay too much for the business in 1898, want of liquid capital, excessive interest and protracted ill-health of my former partner, Ashton, and loss of Orchids in Civil War in Columbia.

The report and observations of the official receiver are to the following effect:—The debtor, aged 41, who has been adjudged bankrupt, states that he commenced business on June 1, 1898, in partnership with another person, under the style of Stanley Mobbs and Ashton, without capital, taking over the assets and liabilities of the business as a going concern, and agreeing to pay £3,350 for the business and £675 for the goodwill. The debtor states that these sums were considerably in excess of the value, and the purchase money was not to be called in for 7 or 14 years, provided interest was paid on same.

The debtor states that about eight years prior to the receiving order, another person joined the partnership, and about five years ago his original partner retired, and the debtor took over his share of the assets and liabilities. The partnership was dissolved on April 15, 1909, and an account and valuation were taken, and his partner took over the assets and liabilities, and there was a balance found due to him from the debtor of £1,608 19s. In December, 1902, the debtor executed a settlement on his marriage, under which he settled a policy for £500 and his household furniture, and he undertook to spend £300 further on furniture, and to effect and settle a further policy for £500.

The unsecured liabilities include £1,608 19s.,

being the amount due to his late partner, mentioned above, the balance is in respect of the balance of the purchase money of the business in 1898.

The books of account stated to have been kept, comprise cash book, bought and sold ledgers, journal and day book. The debtor states that the balance-sheets were made out and the books audited annually and stock taken, and up to 1909 he valued the stock at cost or under, and in 1909 the stock was valued by experts at about 30 per cent. of the debtor's valuation.

The debtor states that he became aware he had not sufficient property to pay his debts in full on April 15, 1909.

DEBATING SOCIETIES.

WATFORD AMATEURS AND GARDENERS'.

—The 17th annual meeting of this society was held at St. Andrew's School on July 8. Herbert Rogers, Esq., presided, and there was a good attendance. A paper was read on "Flowering and Ornamental Shrubs" by Mr. C. Jones, and one on "Mushrooms" by Mr. A. Clements. A discussion of half an hour's duration followed each paper. Mr. Clements' paper was made doubly interesting by a number of lantern slides being thrown on the screen by Mr. Frank Newman illustrating Mushrooms at different stages of their growth. These slides were specially made for Mr. Clements, who afterwards presented them to the society. On the following afternoon a large number of the members visited the Watford Nurseries on the invitation of Mr. Henry Newman, the society's secretary.

READING GARDENERS' ASSOCIATION.

—The annual excursion of this association took place on the 14th inst., when the Japan-British Exhibition at the "White City," Shepherd's Bush, was visited. It had been earnestly hoped that this year the society might visit the Royal Gardens at Windsor, and negotiations with that end in view were in progress when the lamented death of his late Majesty King Edward took place, and all thought of the projected excursion was abandoned. The committee had then somewhat hurriedly to fix on a venue and the Japan-British Exhibition was selected. Arrangements were made with the G. W. R. Co. whereby reserved coaches were attached to a special train to Uxbridge Road, which left Reading at 10.35 a.m. The party numbered 150, including ladies. The Japanese Gardens came in for considerable attention, the scenic railway, the flip-flap and other frivolities were not overlooked, while the music discoursed by the bands was a source of enjoyment to every one. By arrangement with the railway company the members were allowed to return at any time in the evening, but most of the party remained to see the display of fireworks, returning by the special train from Paddington at 11.30 p.m., Reading being reached at 12.25.

REDHILL, REIGATE AND DISTRICT GARDENERS'.

—By kind permission of the Rev. Bridges, M.A., the members paid a visit to the gardens of Worth Rectory, on July 14. Journeying by brake and cycle, the party reached Worth about 6 p.m. They were met at the gate of the rectory by the Rev. Bridges and his gardener (Mr. C. Daisley). Roses in endless variety were to be seen in the gardens. No matter where the party looked, Roses appeared to be plentiful. Some of the most notable varieties included American Pillar, Debutante, and Elaine. The Sweet Peas excited much admiration. The varieties, Dorothy Tennant, Constance Oliver, Lord Nelson, and Douglas Unwin were charming. In the flower borders the Sweet William, Irises, Spiræas, Delphiniums, Dablias, and other flowers were of great interest. Other features of interest were the Laburnum walk, the Dingle, the lakes, and the ornamental terraces. Owing to a Rose fête that was in progress, the rectory gardens were illuminated in the evening.

GARDENING APPOINTMENTS.

Correspondents are requested to write the names of persons and places as legibly as possible. No charge is made for these announcements, but if a small contribution is sent, to be placed in our collecting box for the Gardeners' Orphan Fund, it will be thankfully received, and an acknowledgment made in these columns.

Mr. F. W. SCHOLFIELD, for the past 4½ years Gardener to the late P. FALCKE, Esq., of Owles Hall, near Enfield, Herts., as Gardener to R. W. BHOORNE, Esq., Manor House, Bishopstoke, near Eastleigh, Hants.

Mr. W. PARRY, previously General Foreman in the gardens at NEEWOOD, Albia, as Gardener to A. MCONE, Esq., Ballochneck, Buchlyvie, Stirlingshire.

Mr. W. STURGES, for the past 2 years at Stagenhoe Park, Welwyn, Herts., as Gardener to Lady FITZWILLIAM, Eastcliffe, Bembridge, Isle of Wight.

Mr. W. V. WALL, until recently Gardener to A. HUGHES, Esq., Packwood Grange, Knowle, near Birmingham, as Gardener to JAMES BOOTH, Esq., J.P., Ardencote, Claverdon, near Warwick.

Mr. ALFRED BRISTOW, for the past 7 years Gardener at Worcester Court, Worcester Park, Surrey, as Gardener to The Rt. Hon. Sir HENRY ROSCOE, Woodcote Lodge, West Horsley, Surrey. (Thanks for 2s. for R.G.O.F. Box.—EDS.)

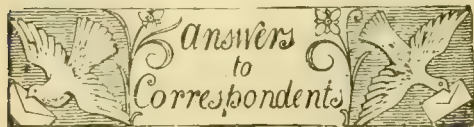
Mr. J. W. SIMONS, late Gardener to Colonel CHAMPION DE CREPIGNY, Burton Latimer Hall, as Gardener to F. WRIGHT, Esq., Petherton House, Rockingham Road, Kettering.

Mr. H. REYNOLDS, for the past year and 8 months Gardener at Shadwell Court, Thetford, Norfolk, as Gardener to R. F. ROUNDELL, Esq., Gladstone Hall, Shipton-in-Craven, Yorks.

Mr. R. SCOTT, for 4 years Gardener to Colonel HARFORD, Doan Place, White-oak, as Gardener to Earl BATHURST FRANKS, Daffodil, Kent

Obituary.

FERDINAND KEGELJAN.—We have just received news of the death of Ferdinand Kegeljan, president of the Royal Horticultural Society of Namur (Belgium), on the 24th inst., at the age of 88. Deceased was a much-respected philanthropist, and he took a prominent part in Belgian horticultural affairs, being celebrated for his culture of Gloxinias. He was a honorary member of the Royal Horticultural Society.



Editors and Publisher.—Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the *Publisher*; and that all communications intended for publication, or referring to the Literary department, and all plants to be named, should be directed to the *Editors*. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are mis-directed.

*** The Editors will be glad to receive, for consideration, large photographs of horticultural subjects, suitable for reproduction as Supplementary Illustrations in this Journal.

APPLE STEM: *F. B.* The stem was not bitten through by the insect, but broken by other means.

BEECH COCCUS: *J. L.* See answer to *W. J.* on p. 396 in the issue for June 11 last.

CLEMATIS: *J. S.* Your informant is quite right in stating that Clematis plants growing against buildings die occasionally from lack of sufficient moisture at the roots. Just as in the case of fruit trees, Clematis, Ampelopsis, Ivies, and other sorts of wall plants do not benefit from the rains to the extent plants do which are growing in the open. At the same time this cause may not account for the death of your plants. It is impossible to say what has caused the trouble in your particular case unless specimens are sent for examination.—*Correspondent.* The Clematis leaves arrived very dry and in a bad condition. There were no eggs on them, but a quantity of caterpillar excrement. The caterpillars had either all escaped, or been crushed in the post, and only one was available for examination. Assuming that they were all the same, the trouble is due to small, just-hatched larvæ of the magpie moth (*Abraxas grossulariata*). We should like to see some fresh material, which should be packed in such a way that it will not dry.

CORRECTION.—On p. 58, for *Campanula Porterschlagiana* read *C. Portenschlagiana*.

DISEASE ON FRUIT TREES: *T. C.* The injury is caused by *Phyllosticta prunicola*. Nothing can be done except to remove diseased portions. Spray the trees next spring with the Bordeaux mixture, using it at half strength.

FRENCH BEAN: *Cymro., Carmarthen.* French and Runner Beans frequently shed their flowers through a check arising from drought at the roots, especially in periods of hot weather. The weather has not been excessively hot lately, but, at the same time, various local conditions may cause the soil to be dryer than is beneficial to the roots. If this is the case, you might apply a good watering, and then place a mulch of half-decomposed manure and leaves over the soil between the rows. There is nothing in the specimens themselves to explain why the flowers should fail to set.

GRAPES: *R. W.* The black Grapes do not at present show signs of disease, but they appear to have ripened, and then to be keeping badly. In such cases as this we should expect to find that the plants have been overcropped or that they are impoverished, owing to unsuitable conditions, or lack of food at the roots. The green berries are affected with Grape rot, caused by the fungus *Gloeosporium ampelophagum*. As a remedial measure you may dust the fruits and leaves with flowers of sulphur at intervals

of ten days or so as long as the disease appears to be spreading. A small quantity of quicklime should be mixed with the sulphur on the second application, and the quantity of lime should be increased on every successive occasion until the proportions of lime and sulphur are nearly equal, but always keeping just a little more sulphur than lime. Before applying sulphur, you should remove any leaves, shoots and fruit showing signs of disease, taking care to destroy them by burning. In winter the branches should be washed thoroughly with a solution of sulphate of iron.

JAPANESE GARDENING: *J. L.* We do not know a book in the English language which deals exclusively with this subject, though articles appear from time to time in the press, including our own columns. A list of plants suitable for this form of gardening is given in the *Journal* of the Royal Horticultural Society, vol. xxxii., p. 1; see also the same journal, vol. xxxi., pp. 12, 18.

LILY CANCER: *R. B.* The plant is attacked by the common Lily disease, *Botrytis cinerea*, a disease which it is next to impossible to cure. As the Lilies in other parts of the garden are unattacked, you will do well to dig up and destroy by burning those few which show the disease. In addition to this, you should take the soil in which the roots have permeated and sterilise it by placing it on a smouldering fire. Remedial measures sometimes applied with a certain amount of success include the spraying of the plants early in spring with a weak solution of potassium sulphide and dusting them with flowers of sulphur.

MAGNOLIA: *A. B.*—The Magnolia is *M. Watsonii*, and the other specimen is *Neillia opulifolia* var. *lutea*.

MILDEW ON GRAPES: *Vitis.* To prevent mildew from attacking your Grapes, dust the surface of the leaves with flowers of sulphur, using a distributor (which you can obtain from any horticultural sundriesman) for this purpose. Keep a sharp look-out for its appearance on the bunches, and apply the sulphur to the affected parts as soon as it appears. The sulphur can be removed later when the Grapes are colouring by syringing with rain water. There is no danger of the mildew spreading after the Grapes commence to colour. The greatest care must be used in ventilating the structure until the fruits are ripe, especially during cold, stormy weather. If the border is wet and clammy, lightly fork up the surface soil and do not walk on it more than is necessary.

NAMES OF FRUITS: *E. H.* The fruits arrived in a smashed condition, owing to the use of a cardboard box for packing.

NAMES OF PLANTS: *H. H., Hutton, and J. W.* Will you please send fresh specimens, packing them as carefully as possible.—*W. J. B.* 1, *Achillea Eupatorium*; 2, *Thalictrum flavum*; 3, *Centaurea macrocephala*; 4, *Spiraea filipendula* fl. pl.; 5, *Eupatorium Weinmannianum*; 6, *Heuchera sanguinea*; 7, not recognised, send when in flower.—*W.* 1, *Polygonum bistorta*; 2, shrivelled beyond recognition; 3, *Iberis sempervirens*; 4, *Fagus sylvatica heterophylla* (syn. *F. s. asplenifolia*); 5, *Gaultheria Shallon*; 6, *Campanula Balchiniana*.—*H. B.* 1, *Retinospora plumosa aurea*; 2, *Cupressus Lawsoniana*; 3, *Kerria japonica* fl. pl.; 4 and 5, shrivelled beyond recognition; 6, *Euonymus radicans variegata*.—*T. A. H.* *Pyrus pinnatifida*.—*P. E. N.* *Epidendrum cochleatum*. The red disfiguration of the leaves is caused by thrips. Sponge the leaves occasionally with soapy water.—*S. C.* *Lilium chalcedonicum*.—*D. M.* 1, *Cymbidium ensifolium*; 2, *Dendrobium crataecium*; 3, *Masdevallia corniculata*; 4, *Dendrobium tortile*; 5, *Oncidium varicosum*.—*Hampstead.* *Oncidium Schlimii*.—*J. P., Carlisle.* *Fuchsia procumbens*.—*H. B.* 1, *Catsetum macrocarpum*; 2, *Polycynis muscifera*; 3, *Gongora cassidea*; 4, *Ada aurantiaca*.—*W. G. B.* The scarlet flower is *Lobelia cardinalis* and the other *Hippeastrum* (*Amaryllis*) equestre.—*J. G.* 1, *Spiraea Bumalda*; 2, *S. Douglasii*; 3, *S. arifolia*; 4, *Lycasteria formosa*; 5, Shrub, send when in flower; 6, *Deutzia crenata* fl. pl.—*H. Roberts.* 1, *Cotyledon umbilicus*; 2, *Valeriana officinalis*; 3, *Cichorium Intybus*; 4, *Stachys betonica*; 5, *Galum saxatile*.—*H. Gandy.* The Thistle is *Silybum Marianum*.

NECTARINE: *D. W. G. H.* The fruits of the Nectarine and Peach sometimes crack owing to greatly fluctuating cultural conditions. In order to prevent the trouble, you should endeavour to keep the roots in an even condition of moisture and regulate the atmosphere in regard to temperature and moisture, in such a manner that violent fluctuations will be avoided.

OAK: *W. E.* Old trees as frequently fail from lack of nourishment as from old age, therefore your proposal to loosen the surface soil and apply a good mulching with occasional waterings of liquid manure is perfectly sound practice, and may have the desired effect. If you turn to the last issue, you will see that your question respecting Heather and Ling has been answered.

PEA: *C. A.* There is no specific disease present; the recent bad weather may be responsible for the failure.

PEACH: *A. B.* The fruits show signs of ordinary Peach mildew. Dust the leaves with flowers of sulphur whilst damp. Let the water pipes be dusted with sulphur when they are made very hot in the evening following a dull day, closing the house for an hour or two afterwards. Take care that the roots are not allowed to suffer from drought, but, at the same time, see that the atmosphere is not kept excessively damp.

PEACH TREE: *W. E. Poole.* There is no disease present on the branches. Probably the root is in some way affected.

PEARS EXHIBITED AT A SHOW: *E. C.* It is not possible for us to give you the information in the absence of further particulars. Can you not apply to the Mr. G. Longhurst mentioned in your letter? This would appear to be the proper way of getting the information required.

SEEDS FROM INDIA: *A. S. E.* Seeds not recognised. Sow some in a greenhouse and send us specimens of the plants when in bloom.

SWEET PEAS: *H. C.* The seedling varieties are not without merit. The purple one, having an especially fine standard, appears to be equal to any existing variety of its colour. In order to determine this, however, better specimens would be required for comparison with others. You would do well to exhibit them before the Royal Horticultural Society's Floral Committee or send the varieties for trial by the National Sweet Pea Society next season, when the relative merits of any seedlings you may have may be determined accurately.

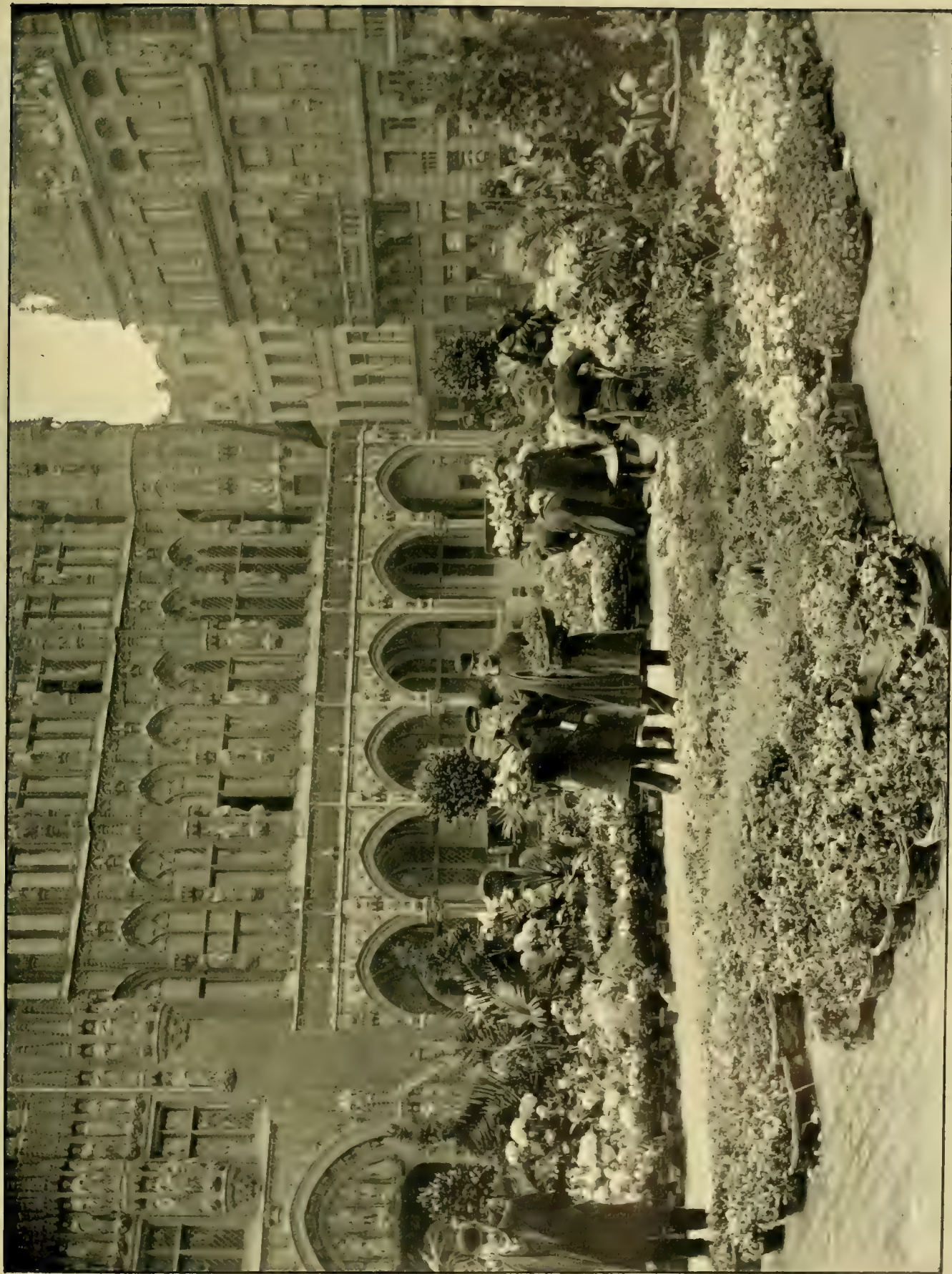
SWEET WILLIAM: *T. H.* The injury is not due to either a fungus or insect.

TOBACCO LEAVES FOR FUMIGATING PURPOSES: *Nicotine.* If you wish to use home-grown tobacco leaves for fumigating plant houses, you should allow the leaves to develop to their full size, then cut them and suspend them in the sun to dry. Beyond drying them thoroughly no other preparation is required, except cutting them into coarse shreds.

TOMATO FOLIAGE: *J. H. B. and C. C.* The leaves are affected with Tomato-leaf rust (*Cladosporium fulvum*). If the fruits are still young and green spray the plants with the Bordeaux mixture. If they are nearly ripe, remove any rusted leaves or plants, and spray the remaining ones with the potassium sulphide solution, using 1 ounce of potassium sulphide to 2½ gallons of water. Dissolve the potassium sulphide (or liver of sulphur as it is called) in a quart of hot water, then make it up to 2½ gallons by adding cold water. The white paint should be protected as this spray would discolour it.

VINE LEAVES: *T. E.* Your leaves are affected with sapwarts. These are caused by excess of moisture in the air. Ventilate the house more freely, especially in the morning.

Communications Received.—*J. Comber* (your letter has been forwarded)—*S. F. & S.*—*E. T. H. S.*—*F. W. and Sons.*—*G. V. I.*—*W. S.*—*C. T.*—*W. C.*—*Royal Meteorological Society.*—*H. M.*—*B. G.*—*E. F.*—*T. M. N.*—*I. C.*—*W. E.*—*F. N.*—*Beeswax.*—*J. E.*—*S. C.*—*D. M.*—*T. M.*—*W. A.*—*A. Y.*—*H. W.*—*A. D.*—*W. F.*—*J. K.*—*U. S. A.*—*W. F.*—*W. P. R.*—*Chloris.*—*Dr. K.*—*Berlin.*—*S. A.*—*P. B.*—*Mrs. E. B. S.*—*A. B. W.*—*A. D. W.*—*J. D.*—*A. W. P.*—*E. Wright.*—*F. J. Chittenden.*—*H. S. T.*—*W. P. & Sons.*—*Rev. J. J.*—*P. B. W.*—*T. H.*—*C. H. P.*—*A. & C. Pearson.*—*F. G. C.*—*R. G. W.*—*H. J. C.*—*W. W.*—*W. A.*—*W. G.*—*F. M.*



THE FLOWER MARKET, "GRAND PLACE," BRUSSELS.

Photograph by W. J. Fisher.

THE Gardeners' Chronicle

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ADVANCING FRUIT SEASON.

THE FINANCIAL OUTLOOK.

MANY remarks upon the circumstances noticeable in market fruit orchards have been made in previous articles; but more are needed to bring the subject up-to-date. The returns published in this journal last week show how general the failure in nearly all kinds of fruit is throughout the United Kingdom, and, if they had been mainly from market growers, instead of from gentlemen's gardeners, it is probable that they would have been even more unfavourable than they are, because the crops in highly-cultivated gardens and private orchards are better than those in larger plantations.

It is to be feared that the year will prove one of heavy financial loss to many market growers, if not actually ruinous to a considerable number of them. Prices, even when higher than usual, are seldom high enough to make up for so great a deficiency. Gooseberries sold well throughout the season, and, it is possible that the prices made up for the lack in quantity in cases where three-fourths of an average quantity were obtained; but Black Currants, in consequence of foreign competition, made but little more than ordinary prices until the last week or two of the

season, when very few growers had any left. As for Cherries, high as were their prices, these did not give any near approach to compensation for the extreme shortness of the crop. Strawberries and Raspberries do not come into the category of short crops, and possibly the returns from them were moderately remunerative, although the coldness of the weather told against good markets for the former fruit especially.

It is in relation to Plums and Apples that the financial outlook is most serious, for Cherries and Pears, although even more deficient, are not grown nearly so extensively.

The earliest consignments of Rivers' Early Prolific Plums realised good prices; but there was a speedy fall, in consequence of supplies from the Continent. Some idea of the volume of these competing supplies may be gained from the statement of my salesman in a southern seaside market to the effect that they had received 600 half-sieves of Orleans Plums from the Seine Valley in the latter half of the last week of July, just when my Prolifics were being marketed.

Early Apples have not started well, considering the shortness of the crop, from 2s. 6d. to 3s. 6d. per half-sieve having been the prices for "firsts" of cooking varieties in the last week of July. The fruit keeps on dropping from the trees that are bearing, a wind of quite moderate force being sufficient to strew the ground with Apples of various sizes. As stated last month (see p. 17), Apples have a very slight hold upon the trees this season, and any approach to a gale, now that the fruit is heavy, would glut the markets with windfalls.

SIZE OF FRUIT.

Plums are of a good size, as such a thin crop should be; but many varieties of Apples have a hide-bound appearance, and are not swelling properly. The early kinds in the markets have been small, as a rule. Early Julyan, particularly, matured too soon, which is a curious result in a wet and sunless season. Probably the coldness of the soil has prevented the flow of sap from being normal, in spite of the abundance of moisture. Or it may be that the explanation of the bad setting and dropping which appears to be most in favour with growers applies also to the size of the fruit. This is that the fruit-buds which fruited this year were not properly matured in the wet and cold autumn of 1909, and, therefore, have failed to sustain the fruit well. Worcester Pearmain and Stirling Castle, which have about three-quarter crops in my oldest plantation, are among the varieties which have a hide-bound appearance, while Lane's Prince Albert seems likely to be much smaller than usual, and Beauty of Bath bears small fruits where they are at all thick on the trees. Lady Sudeley, Potts's Seedling, Queen, Domino, Warner's King and Bramley's Seedling are bearing fruits of fair size; but there is not many on the last-named variety.

APPLE SCAB.

As was to be expected in a wet season, scab is bad on trees that have not been sprayed two or three times with the Bordeaux mixture. Irish Peach and Duchess of Oldenberg are so badly marked and cracked by scab in my orchards that they will be worth very little to sell. Having Gooseberries under them, they

missed a timely spraying given to most other kinds, and, after the Gooseberries were picked, the operation was too late to do much good to the fruit. Many other varieties, even those which were sprayed at the proper times, are marked with scab, but not cracked. Cox's Orange Pippin is not scabby, but is much russeted, perhaps in consequence of the spraying. By the way, I have clear evidence this season of the spotting of the leaves of this variety by spraying with Bordeaux mixture, as three trees left unsprayed are exempt from the spotting. There is no defoliation worth notice at present, but the spotted leaves are deteriorated in vigour, and will certainly drop prematurely. After this season I shall refrain from spraying this variety with the Bordeaux mixture when it is in leaf, but shall do all that can be done to keep the disease from developing on the wood. Possibly dilute lime and sulphur wash will be tried on the foliage next season. In other cases the benefit of systematically spraying with Bordeaux mixture during three seasons is obvious and considerable. Some trees of Dume-low's Seedling (Wellington) and Bismarck that were badly affected with scab three years ago are now almost clear of the malady.

UNDESIRABLE APPLES.

There are some varieties of Apples which, though commonly grown, should never be recommended for market plantations, although they do better on some soils than on others. Three varieties, covering over an acre of my land, are to be dug up in the autumn, after a trial of ten years, and two others are to be allowed only another year to determine whether liberal manuring last year and this year will improve them sufficiently to render their retention desirable. King of the Pippins sells well, and it does not concern the market grower that it is hardly worth eating. But what does concern him is that it is inveterately liable to canker. Potts's Seedling, a very fine cooking Apple, is equally bad in this respect. Stirling Castle is only fit for gardens where trees of an extremely dwarf habit of growth are desired. Nothing short of profuse and frequent manuring or resolute thinning of the fruit can prevent it from "cropping itself to death" in a few years. Besides, it is badly subject to canker. Duchess of Oldenberg is not big enough for a culinary Apple, and is not worth eating for dessert. Moreover, it has a persistently inward habit of growth, and does its best to grow like a Lombardy Poplar. Again, it is badly liable to scab, and yet dislikes the remedial spraying. I have it in two fields of different classes of soil, and it does not flourish in either. It has a tendency to make long and slender shoots, and for that reason, as well as on account of its inward habit of growth, it needs severe thinning and hard pruning to buds pointing outwards until it is well furnished with branches. But it is not worth the trouble, as there is the choice of scores of better market varieties. Irish Peach is the last that needs to be mentioned as not worth planting for market purposes. It is a nice early Apple, but is too shy a bearer, and its habit of fruiting mainly on the ends of shoots of a straggling and pendant growth causes it to take up more space than it pays for.

SUMMER PRUNING.

When time allows I get on with the summer pruning of Apple trees four and five years from the planting. Old and big trees have to

do without the operation, and they need it much less than young trees, because, after they have got into the fruiting habit, they make fewer shoots to crowd their interior parts. I believe in the advantage of summer pruning for the purpose of letting sunshine into all parts of a tree, but I have no faith in the prevailing theory as to its effect upon the formation of fruit buds through the stopping of laterals. That is to say, my opinion is that summer pruning tends to promote the development and ripening of fruit buds by letting sunshine into the interior parts of a tree, but that, apart from this advantage, it tells against such development. The theory is that, by shortening a lateral, the energies of the tree are increasingly directed to the development of the lower buds into fruit buds. This seems to me contrary to the natural course of events.

fruit buds. Further, many laterals need to be cut off close to the main shoots, to give sunshine access to those left and to the main shoots. For these reasons I am convinced that summer pruning pays, although it involves a great deal of work. *A Southern Grower.*

THE ALPINE GARDEN.

THE ALPINE HOUSE AT KEW.

In an article by Mr. Wyndham Fitzherbert in your number of June 25, he refers to the beauty of the plants growing in the Alpine House at Kew during May. It has often been a cause of wonder to me why more people do not take up this branch of gardening, for its simplicity and inexpensiveness should appeal to all, and I fully endorse Mr. Wyndham Fitzherbert's description of the Alpine House being "one of the most

Close to the glasshouse are a number of cold frames. Here the little plants are grown, first of all, in pots plunged in earth in these frames, and, as each plant comes into bud, it is taken into the Alpine house until its flowering period is over. It is not, of course, within the means of everyone to possess a range of frames such as may be seen at Kew, and many of us would, therefore, have to grow some or all of our plants in our glasshouse for some time previous to their flowering. The Alpine House itself is a span-roofed one, and measures, roughly speaking, 45 feet by 10 feet. There is a narrow path in the centre, with stages on either side. The staging is about 3 feet 4 inches wide, and appears to be made of slabs of slate supported by a framework of iron and wood. On the slates is spread a bed of cinders, on which stand the pots of plants in an informal manner. The roof is constructed so that air may be admitted, and there are also roller blinds to give shade in hot weather.

The pots are worthy of notice, as they are



FIG. 31.—VIEW IN THE ALPINE HOUSE AT KEW.

The adage, "Growth follows the knife," applies to a lateral just as much as to a main shoot, and anything which promotes wood growth delays fruiting. It is desirable to delay the fruiting stage until a tree is well furnished with branches, and to give time for the branches to become sturdy before they are called upon to bear a great weight of fruit. But if a main shoot is left entire, it is much more likely to form fruit buds all along its length than a cut shoot is to form them on the portion left. The case of a lateral is similar, provided that it is exposed to the sunshine. But it is not desirable that a lateral should fruit along its uncut length, and, therefore, its pruning is beneficial. Moreover, if interior laterals are left to grow until the late part of the autumn or the winter, they shade not only each other, but also portions of the main shoots, and thus prevent the development of

pleasing and instructive spots at Kew." Perhaps a short description of this house, and of a visit I paid to it early in March may be of use to those who possess a small or large glasshouse, and who do not realise that it may be kept gay and bright all the year round without the use of any kind of heating apparatus.

As I opened the door my eyes were greeted with a blaze of colour, and a second glance told me that I was in the sheltered home of the hardiest and sturdiest class of plants, whose natural habitat would be the colder and more rigorous parts of the world. It was evident they appreciated the protection afforded to them, and were flowering profusely. Most of them were quite capable of growing and blooming out-of-doors; but in this Alpine House they flower a few weeks earlier, and their blossoms are produced in greater perfection than if they had to buffet with inclement weather.

Briefly described, the system in force at Kew is as follows:—

almost of the same width top and bottom, and mostly of the following measurements:—Diameter at top, $7\frac{1}{2}$ inches; diameter at bottom, 5 inches; height, $4\frac{3}{4}$ inches.

The soils used vary according to the needs of each plant. Some have chopped sea-shells mixed in, and some are composed largely of peat and silver-sand. Others have chippings of limestone and sandstone, or, perhaps, granite on the surface of the soil; while others, again, present a rockery in miniature, and the little plants appear to actually grow on small lumps of sandstone or granite.

There were, I should say, some 300 pots and about 30 different species of plants at the time of my visit. I will briefly describe a few of them. To those who contemplate taking up the idea for themselves, I would recommend a book called *The Unheated Greenhouse*, by K. L. Davidson, which describes how to keep such a house filled with bloom all the year round.

A large number of the plants blooming at K

were of the Saxifrage family, notably *S. Rocheliana* and *S. Ferdinandi-Coburgii*, both of encrusted habit, and studded with white flowers in the former and yellow flowers in the latter species. *S. oppositifolia* was there in several shades of colour, and *S. apiculata*, with numerous pale-yellow flowers. *S. Boydii* and *S. Paulinæ* were both out, and so was *S. Salomonii*, bearing white blossoms about 2 inches high. *S. Grisebachii* looked healthy, and its curious drooping stems and crimson flowers had a distinct and pleasing appearance. A somewhat rare plant was present in *Epigæa repens*, of creeping, shrubby nature, and small, white flowers; while better known species were *Scilla bifolia* and *S. siberica*, *Chionodoxa luciliæ*, *Puschkinia scilloides*, and *Bulbocodium vernum*. *Arabis alpina*, though common, is a pretty plant; while *Gagea lutea* may be uncommon, but is certainly not pretty! Plenty of colour was provided by the Tulips,

many pots were grown of *P. verticillata*, with its mealy leaves and whorls of bright yellow flowers. Other noticeable Primulas were *P. Fortunei*, *P. marginata*, *P. megasefolia*, and *P. denticulata*, all bearing blossoms of varying shades of lilac and mauve, and having mealy stems and leaves. Both the type and the white variety of *Cyclamen coum* were in bloom, and so also was that lovely little *Hyacinth azureus*, and its near ally, *Muscari atlanticum*, one of the so-called "Grape Hyacinths." *Adonis amurensis* was over, and *Iris sindjarensis* was nearly so. There were three species of *Erythronium* out, *E. Hartwegii*, *E. citrinum*, and *E. robustum*, their colours being respectively yellowish-green, pale cream, and bright yellow. I also noted *Fritillaria aurea* for its handsome yellow flowers, chequered brown, and *Ornithogalum Hans Kneekii*, for its curious, white blossoms striped with green. Other plants in bloom were *Draba rigida*, *Iberis gibralt-*

THE NATURAL HISTORY OF CONIFERÆ.

(Continued from p. 73.)

THE facts already recounted satisfactorily explain how conifers are able to retain their foliage and yet withstand the rigours of our frosty winter; but they do not tell us why conifers have not adopted the annual leaf-shedding habit that appears to represent the true spirit of vegetation thriving in regions where there is a season of the year during which water is not adequately available. It might be suggested that the evergreen habit has become so deeply ingrained in conifers that it was impossible for them to overcome this hereditary trait. Such a suggestion is not justified, inasmuch as the Larch and several other kinds of conifers have actually acquired the deciduous habit.

The question arises, then, "Is not, after all,



FIG. 32.—*IRIS FLAVESCENS* IN THE ROYAL BOTANIC GARDENS, KEW, IN JUNE.

[Photograph by W. J. Vasey.]

especially by *Tulipa Kaufmanniana* and its variety *aurea*, both opening their flowers flat, and being of most brilliant shades of yellow and gold. *T. suaveolens* had large, scarlet blossoms, *T. pulchella* small, cherry-crimson flowers; while *T. Leichtlinii* had lovely white, cherry-coloured flowers on long, drooping stems. *T. Clusiana* was only in bud.

Narcissi of various kinds were much in evidence. *N. obvallaris*, *N. minor*, and *N. bulbocodium* had yellow flowers; so also had *N. cyclamineus*, with its elegantly-reflexing perianth petals. *N. triandrus* was also there, and its beautiful, white flowers were both dainty and striking in appearance.

Heloniopsis japonica was blooming freely, so also were the *Anemones hepatica*, *blanda*, and *hortensis*. *Crocus versicolor* var. *violaceus* struck me as being very pretty, with sturdy, little, white flowers, striped outside with plum colour. I saw a great many different species of Primula, and

tarica, *Corydalis bulbosa*, *Theaspi densiflorum*, *Morisia hypogæa*, *Achillea Halleri*, and *Shortia uniflora*. M. E. Stebbing.

IRIS FLAVESCENS.

THE illustration in fig. 32 represents a large bed of this pretty, pale-yellow *Iris* in the Royal Botanic Gardens, Kew. Mr. J. G. Baker, in his *Irideæ*, places *Iris sulphurea*, K. Koch, and *Iris imbricata*, Lindl., under this species, and describes the habitats as Bosnia and the Caucasus and Armenia. It is classed amongst the tall, bearded, flag Irises, and is closely allied to *Iris germanica*. Like those of many other members of this group, the flowers are sweetly scented; they are produced in May. Of a deeper shade of colour, but not quite so pleasing nor so free in flowering, is the form known as *I. flavescens* var. *leucantha*. These Irises prefer a rather dry and sunny position, and good, loamy but not freshly manured soil.

the coniferous type of leaf quite as well suited to our climate as the leaf-shedding mechanism of ordinary broad-leaved trees?"

When we call to mind the distribution of conifers in Northern Europe, and the various facts gleaned by foresters as to the growth of conifers, we are apt to jump to the conclusion that conifers are inferior to broad-leaved deciduous trees in their power of maintaining themselves in the struggle for existence. We find coniferous forests occupying less favoured sites—often nearer arctic latitudes and alpine altitudes—and we know that in our latitudes conifers can be grown successfully (from an economic point of view) on soils too poor for the profitable cultivation of broad-leaved trees, such as the Oak and the Ash. Yet even these facts convince us that conifers have considerable powers of growth in soils and climates that are more or less unfavourable, and they also prove that the conifer s by no means an unsuccessful type of

plant. But, on favourable sites, it is not always the conifer that is defeated by its broad-leaved, leaf-shedding rival. For, in Germany, cases are known in which the Spruce or Silver Fir defeats such a redoubtable warrior as the Beech, which is wont to overthrow many other broad-leaved species of trees, including the Oak, largely by means of the lethal shade that it casts and in virtue of its own power of enduring shade. Where the Spruce and the Beech battle, sometimes the Spruce forest advances, driving the Beech forest before it and exterminating the vanguard trees of the latter.

The efficiency of the coniferous apparatus is also demonstrated by the wide range of distribution of a single genus, such as *Pinus*. True Pines form low scrub in the icy and snowy climate of arctic and alpine sites; they give rise to vast forests in cold-temperate and warm-temperate lowlands, and even occasionally do so in sweltering tropical climates. They grow on soils

question? If the matter is one of water-supply and water-expenditure, and, in particular, if it is necessary for the individual leaf to present a small evaporating surface, which is also specially protected from rapid outward passage of water, there are three possible causes:—

(i.) The roots may be able to absorb only slowly, so that the supply of water to the tree is relatively small.

(ii.) The stem may be incapable of conducting water upwards with rapidity, so that the supply of water to the leaves is relatively small.

(iii.) The aggregate leaf-surface of the whole tree may be so great (notwithstanding the small size of the single leaf) that there would be an excessive loss of water unless unusual provisions were made to check the loss from each leaf.

In connection with the first suggested cause, it may be admitted at once that conifer roots generally seem to absorb water slowly and to be incapable of setting up anything more than a slight

"tracheids." Water travelling up the cavities of these is exposed to greater resistance than when moving up longer and wider wood-vessels. Hence we might imagine that sap could not ascend in coniferous wood at a sufficient pace to balance the loss of water due to transpiration from more delicate, deciduous foliage. But, in following this train of thought, we are apt to forget the existence of the Larch, which proves the direct opposite. Moreover, I have found that water can and does ascend the Larch stem rapidly—probably quite as rapidly as it usually travels up the Beech. Thus the structure of the wood of the conifer forms no insuperable barrier to the assumption of a deciduous habit and the acquisition of delicate leaf-structure.

There is, therefore, no reason to believe that the supply of water to the leaves is necessarily inadequate to such a change of habit.

But when we consider the question of expenditure of water by the conifer, we encounter a fact for which we may have been unprepared. Though the surface exposed by the single conifer leaf is very small when compared with that of an Oak or any ordinary broad-leaved tree, yet the number of leaves on the ordinary conifer is so great, that the aggregate surface of the whole foliage is apt to be far greater than that of an equal-aged or equal-sized, broad-leaved, deciduous tree.

Now, the amount of water evaporated by a tree depends not only on the size of the individual leaf surface, but also upon the number of leaves. Hence it should not surprise us that a number of coniferous species expend and require quite as much water as a broad-leaved tree of the same size or age. Such kinds of conifers, taken to dry places, grow feebly or die. If the size of the individual leaves of the conifer were to be greatly increased, or the skin (epidermis) of the leaf were to become more pervious to water, the loss of water by evaporation would tend to be greatly increased—and the tree would be threatened with death from desiccation. Hence the small size and peculiar structure of the conifer leaves may be correlated with the great number of the leaves on the plant. Having thus acquired leaves of this structure in past ages, possibly under climates utterly different from those in which they now live, conifers were enabled to persist in cold-temperate climates for the reasons given earlier in this article. It is obvious that were the conifers to produce fewer leaves, they would decrease their power of producing food-material, and, consequently, would suffer in growth and productiveness. But why they have not in the past adopted the policy of having fewer and larger leaves we cannot say. *Perry Groom, D.Sc.*

(To be continued.)



[Photograph by Wyndham Fitzherbert.]

FIG. 33.—*CAMPANULA PUSILLA ALBA*.

varying from dry sand and sour heath to soaking bog. Even one and the same species of conifer may exist on very diverse soils, in very varied habitats, and in very diverse climates: such is true of the Scots Pine, and even more so of the common Juniper, which extends from the frigid Arctic zone to nearly sea-level in warm Mediterranean countries, and from dry, scorching sand-dunes to misty, shaded forests.

Nevertheless, it cannot be denied that broad-leaved, deciduous trees preponderate in favoured situations in our climate, and seem here to have largely ousted conifers. Hence once more the question arises as to why conifers have not adopted the broad and less stiff foliage of deciduous dicotyledons. Is there any structural or architectural feature in the conifer that renders it essential for the individual leaf to be small and so constructed as to transpire slowly? Or is there any peculiarity in the working of the coniferous machinery that renders the change in the type of the foliage more or less out of the

amount of root-pressure. Yet, despite this, the Larch shows that the difficulty of obtaining water is not so great as to debar the possession, on the part of a conifer, of a vast number of rapidly-transpiring, deciduous, and soft leaves. (It would be interesting to have some particulars concerning the rate of absorption of water by the Larch.) Moreover, the slow rate of absorption, and the poverty or lack of root-hairs on the roots of conifers might quite as well be the effect, not the cause, of the slow transpiration; for other slowly-transpiring plants (including certain monocotyledons and dicotyledons) often have no root-hairs.

As regards the rate of the conduction of water from the supplying roots to the expending leaves, we know that in conifers the wood, which conveys the water up the stem, differs from that of broad-leaved trees in lacking the long, relatively-wide, open tubes known as "wood-vessels." Coniferous wood is mainly constituted of short, very narrow, closed, tapering tubes termed

CAMPANULA PUSILLA ALBA.

THIS *Campanula* is found throughout the chain of the Alps in calcareous regions on the Jura, the Pyrenees, the Cevennes, the Vosges, the Sudetic range, and the Carpathians, living in the natural débris, stone slides and glacial moraines at an altitude of from 1,000 to 6,000 feet. It was first introduced into this country in 1821. In Nicholson's *Dictionary of Gardening*, *Campanula cespitosa* and *C. pusilla* are given as two distinct plants, but in practice it is almost impossible to find any difference between them. Their dissimilarities, if any, are so minute as to have no importance in horticulture. Possibly, *C. pusilla* is less stoloniferous in character than *C. cespitosa*. The plant is the commonest, as well as one of the loveliest of all the small-growing *Campanulas*, thriving in sunny or shady places among rocks or on level ground, though it flowers best in full sunshine. It is the prettiest of the rock *Campanulas*, and flowers from June until October, and may be used indiscriminately in edgings, carpets or the rock garden, and is pretty

in pans and pots. The plant rejoices in a calcareous compost, so that limestone chips should be added in quantity to the loam in which it is grown. The soil should be heavy, as the plants do not flower freely in light soil. It is very close and erect in growth, rarely forming flower-stems over 5 inches in height. The lanceolate leaves are light green and are carried on thin, wiry stems. The stem rises from a rosette of closely-pressed leaves surrounded by a number of leafy branches, and the flowers, which are of half ball-shaped, drooping, campanulate form, are of a fine blue colour slightly inclining to lilac. The pure-white variety is even more charming, and has a freer habit than the type. Of this there are two forms, one almost entirely disappearing in the winter, while the other is evergreen and keeps the ground carpeted during the dark days of the year with emerald foliage. *C. pusilla alba* is sometimes grown under the name of *C. Boccioni alba*. Both the type and the white variety are easily increased by division or seed.

Campanula alpina is growing very close to the plant figured, but it is not shown in the illustration. *C. alpina* is rare in cultivation, but it is very beautiful, and is closely allied to *C. barbata*. It forms a small, dense tuft of narrow, grey, downy leaves, and sends up a flower-spike

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables and Summaries, ante, pp. 77-82.)
0, SCOTLAND, N.

SUTHERLANDSHIRE.—Small fruits and Strawberries are average crops, but Apples, Pears, Plums, and Cherries are considerably below an average quantity. In this late district it is too early in the season to say much as to the quality of the fruits. The soil here is a good, free, black, sandy loam, resting on water worn gravel and sand. The gardens are sheltered on the N., N.E., and N.W. by hills, rising ground, and woods. Easterly winds in spring are sometimes troublesome, and in some years these cold winds continue well into June. *D. Melville, Dunrobin Gardens, Sutherland.*

1, SCOTLAND, E.

ABERDEENSHIRE.—Apples, Pears, Plums, Cherries, Gooseberries, and Black Currants are all very light crops. Strawberries are equal to the average; whilst Raspberries are a very heavy crop, these fruits looking exceptionally well. Our soil is a loam of medium quality, resting on a pan. *James Grant, Rothienorman Gardens.*

BANFESHIRE.—With the exception of Apricots, Peaches, and small fruits, all other kinds are

moist that many of the blossoms rotted. Early Strawberries were a fair crop, but there is much mildew on the foliage, while the main and later crops have suffered much from lack of rain; added to which the crippled condition of the plants consequent on an exceptionally severe winter was enough of itself to make hopeless the expectation of much fruit. The fruit trees generally are healthy, the foliage being clean. *R. P. Brotherston, Tynningham.*

KINCARDINESHIRE.—Appearances are exceedingly unpromising, and I anticipate the worst season we have had here for years. The trouble is partly owing to unripened wood, and also to the continuous frosts when the trees were in blossom. The soil here is of a light, sandy nature, on a subsoil of shingle and cold pan. *John M. Brown, Blackhall Castle Gardens, Banchory.*

MIDLOTHIAN.—We experienced a very low temperature at the time Pears were setting, and this caused most of them to drop. The same conditions prevailed when the Cherries were in flower, and they also set badly. *W. G. Pirie, Dalhousie Castle Gardens.*

—Most varieties of Apple, Pear, Plum and Cherry trees showed an unusual quantity of blossom. Varieties that bear well most years have a poor crop, and many good, reliable varieties have no fruits. Small fruits, however, are more than usually abundant. The soil is light, with a subsoil of gravel. *James Whyte, Dalkeith Gardens.*

PERKESHIRE.—The cold, wet and sunless weather of last year, and the subsequent hard winter caused great damage, both amongst fruit trees and the smaller fruit bushes. Apples, Pears and Cherries blossomed freely, but set fruits sparingly, which I attribute to weakness in the flowers themselves. The older beds of Strawberries suffered damage, but the younger plantations escaped. A great number of the buds of Raspberries either remained dormant or grew weakly, hence this crop is smaller than usual. Black Currants are not giving such a large crop as the amount of blossom promised, but Red and White Currants and Gooseberries are very plentiful. The soil here is of a light, sandy loam, overlying a bed of gravel and sand. *Geo. Haig, Garvald House Gardens, Dalphinton.*

6, SCOTLAND, W.

AYRSHIRE.—All hardy fruits in this garden are under an average quantity, excepting the Plums on walls and the small fruits. The May frosts destroyed the bloom. The garden is in a low situation, and the subsoil is cold. *W. Priest, Eglinton Gardens.*

—Hardy fruits are not so plentiful here this season as usual, but the quality is good. Strawberries were well flavoured, although rain fell almost every day whilst they were ripening. Frosts were not so prevalent in May this season, and the result is that fruit trees and bushes are in a more healthy condition than they have been for years past. The soil is of a rather light nature, resting on a gravel subsoil. *D. Buchanan, Bargany Gardens, Paisley.*

DUMFRIESHIRE.—All stone fruits, that is to say, Apricots, Plums, and Cherries are scarce. Peaches and Nectarines are not grown outside here. Apples are an average crop in the case of Codlin varieties, Lord Suffield and Bramley's seedling. Strawberries and small fruits are equal to the average. *John Urquhart, Hoddon Castle Gardens, Ecclefechan.*

—Small fruits do remarkably well in these gardens. Black Currants growing to a large size. Late Gooseberries grow much larger than early Gooseberries. Strawberries do extra well here for a couple of seasons, but older plants furnish very small fruits. We plant half the Strawberry beds afresh each season, and this system furnishes us with fine fruits. The soil is a thin, light loam, on a gravel bottom. Trenching serves to deepen it and lower the water table. *James McDonald, Dryfeholm, Lockerbie.*

2, ENGLAND, N.E.

YORKSHIRE.—Fruit trees in this district looked promising early in spring: no frost of any great severity was registered during the time the trees were in bloom, and a good



FIG. 34.—ROSE "CAROLINE TESTOUT," FLOWERING ON PLANTS RAISED FROM CUTTINGS.

[Photograph by C. Turner.]

rather over 6 inches in height bearing drooping bells of a deep purple-blue tint, in May and June. The plant appreciates rich soil, and should be given a compost of leaf-mould and fibrous loam in equal proportions mixed with an abundance of limestone chips. It often proves a difficult subject to grow, and in some gardens it dies after flowering. *Wyndham Fitzherbert.*

ROSE "CAROLINE TESTOUT."

THE illustration in fig. 34 shows a bed of this popular Hybrid Tea Rose composed of plants growing on their own roots. Mr. C. Turner, of Highgate, London, N., who supplied the photograph, informs us that the plants were rooted from cuttings in the autumn of 1906. The cuttings were planted in October, in the open ground in the kitchen garden, where they were permitted to remain until the following autumn. The propagation of Roses from cuttings and layers is probably as old as Rose culture itself, but we have so many questions addressed to us on the subject that it may be questioned if the practice is employed at the present day so often as it might be. The illustration may, therefore, serve to remind amateurs that there are other ways of propagating Roses than by budding and grafting.

deficient. The only varieties of Apples carrying a full crop are Bramley's Seedling, Warner's King, and Lord Suffield. Of Plums, there are good crops of Victoria and Mitchelson's; and of Cherries, Emperor Francis, a sort that seldom fails, is satisfactory. The soil in these gardens is a black, sandy loam, resting on a gravel subsoil, which seems to suit all kinds of fruit trees. *Chas. Webster, Gordon Castle, Fochabers.*

—Small fruits, including Black and Red Currants, are satisfactory, and the crops are looking well. Raspberries also promise to be good. Strawberries are satisfactory, although they were somewhat spoiled by a hailstorm on June 22. Victoria Plums are good, but the varieties Kirke's, Jefferson, Monarch, and River's Early Prolific are not so plentiful as last season. *George Edwards, Ballindalloch.*

BERWICKSHIRE.—Apple trees developed plenty of blossom, but the fruits did not set, and, in common with all the trees here, suffered from drought on our light, gravelly soil. *James R. Redpath, Duns Castle Gardens, Duns.*

EAST LoTHIAN.—This is one of the worst fruit seasons on record. There was very little blossom on Plum and Pear trees, and consequently there is little fruit. Apples and small fruits flowered profusely, but the weather at the critical period for setting was so continuously

fruit year was anticipated. But east winds brought blight in their train, with the result that most of the fruits dropped. Apples and Plums are very scarce, and Pears even fewer. Small fruits were plentiful and good, but all crops suffered severely, and in many cases were completely ruined by hailstorms on June 30 and July 1. The early spring was wet and cold, followed by very dry weather, and these conditions had a serious effect on vegetation generally. Our soil is a light loam, resting on a subsoil of chalk. *F. Jordan, Warter Priory, York.*

— There was a moderate show of blossom on Apple and Pear trees, but the fruits did not set owing to the cold weather which prevailed early in April. Royal Sovereign Strawberry promised to give good returns, but the crop was ruined by the heavy rains which occurred after June 22. For a month previous to that date we had only had .59 inches of rainfall, whereas after that date 2.70 inches fell in ten days. What is needed for crops on our hungry, sandy land on sandstone rock are alternate rains and sunshine. Givon's Late Prolific Strawberry is bearing well. *J. G. Wilson, Chert Park Gardens, Wakefield.*

— The fruit crops in this district are very poor, with the exception of small fruits. The dull, damp weather at the time the Apple and Pear trees blossomed had a disastrous effect on the crops, scores of trees that were laden with blossom in many cases have set no fruits. But what fruit there is promises to be of fine quality. Royal Sovereign, Bedford Champion, and Givon's Late Prolific Strawberries having been very fine. Nuts of all descriptions have failed in nearly all cases. *Jas. E. Hathaway, Baldersby Park, Thirsk.*

— This is one of the worst fruit seasons I have known. The Apple crop is almost a complete failure, and Pears are very poor. Plums are an average crop, but Gooseberries are very deficient. Red and Black Currants are an average crop. Raspberries are plentiful, and Strawberries have been very good. *A. E. Sutton, Castle Howard Gardens.*

3, ENGLAND, E.

CAMBRIDGESHIRE.—The fruit trees in these gardens were a grand sight when in bloom, but we had 8° degrees of frost on May 10, which destroyed nearly all the fruit. Apple trees have been very badly attacked by the "maggot," although they were sprayed twice during the winter months with caustic alkali. The soil here is a very strong loam, resting on clay. *T. W. Birkinshaw, Hatley Park Gardens, Gamlingay.*

— The Apple crop is a very irregular one in this district owing to so many fruits falling when young. Peach and Nectarine trees are carrying heavy crops, and are looking very healthy. Pears are scarce, and some of these fruits are damaged by the Pear maggot. Strawberries have been a heavy crop, but some of the fruits of late varieties decayed on the plants owing to the rains. Raspberries are abundant. Frost prevailed when the Apricot trees were in bloom, consequently there is a light crop of these fruits. *W. J. Snell, Wimpole Hall Gardens, Royston.*

— The Apple and Pear trees flowered well, but the cold weather and heavy storms of rain and hail caused a poor "set." Apples especially are much under an average quantity, being found mostly towards the centres of the trees. Small fruits are good average crops, and the bushes are clean and healthy. Strawberries escaped the frosts and promised well, but the hot, dry weather in June caused many of the berries to ripen before attaining their full size. Our soil is of a rather light nature and it rests on chalk, consequently hot, dry weather soon shows its effect on vegetation. *B. Goodacre, Moulton Paddock Gardens, Newmarket.*

ESSEX.—The fruit crops are disappointing this season. Apples and Pears are under the average, while Plums, excepting the wall trees, are a total failure. Strawberries, which at one time looked promising for a large yield, rotted badly, owing to the wet and cold weather. Raspberries, Gooseberries, and Red and White Currants are good average crops, but Black Currants are a total failure. Heavy rains followed by severe frosts on two or three nights

during the time most of the fruit trees were in bloom are largely responsible for a poor fruit year, but the cold, inclement weather of last summer and autumn must also be taken into consideration. The soil here is a stiff, cold clay. *Arthur Bullock, Copped Hall Gardens, Epping.*

— Frosts, following rain in the early part of May, while the trees were clothed with a profusion of strong, expanded blossoms, had the effect of completely destroying the prospect of a bountiful fruit harvest. Of Apples there are two notable exceptions, King of the Pippins and Norfolk Beefing bearing heavy crops of good fruit. A large tree of Hambleton Deux Ans, in a fairly-sheltered position, and which was covered with strong, healthy blossoms when the frost came, has only a partial crop, and the points of the young growths are brown. Young trees of Stirling Castle, Lord Grosvenor, Early Victoria, and Red Quarrenden are carrying fairly good crops for young trees. Pears, Plums and Cherries are almost failures. Bush fruits and Strawberries are bearing average crops. The soil is a sandy loam, resting on a sub-stratum of clay. The position is 240 feet above sea-level, and the ground slopes to the south. *H. W. Ward, Lime House, Rayleigh, South-East Essex.*

LINCOLNSHIRE.—The fruit crops are disappointing. There was a good show of blossom, but the fruits were small, and they fell off in large quantities. Owing to the unfavourable autumn of last year, the wood did not ripen properly. Peaches and Nectarines have the most satisfactory crops of stone fruits. Strawberries were much effected by rains when ripening. The soil here is a brown loam, resting on blue clay or ironstone. *H. Vinden, Harlaxton Manor, Grantham.*

— The Apple crop in this locality is very thin. Plums and Pears are slightly more plentiful, but these also are under the average. There was a greater profusion of blossom this spring than for some years past, but the flowers were injured by severe frosts in May. Gooseberries and Currants are plentiful and of good quality, as were the early Strawberries, but later ones have been spoilt by the continuous rains and cold weather. Our soil is of a light, sandy nature. *Fredk. Barton, The Gardens, Hainton Hall, Lincoln.*

— There are very few Apples or Pears in this district, for many orchards have scarcely any fruits. Scores of trees which have rarely failed to carry a crop have this season not a single fruit. The Cherry and Plum crops are also total failures. This is rather difficult to explain since the Pear blossom was very fine, and that of Apples fair, and Plums were a mass of bloom. During the time the bloom was open we did not experience much frost, but the temperature was very low with east winds, and I noticed that the flowers became damaged and eventually turned brown. There are very fine crops of Pears, Plums, Peaches, Figs, Apricots, and Nectarines on wall-trees, but I attribute this to the system of protection we afforded the trees during the critical time mentioned. We covered them with "Frigi Domo," which was fastened at the top of the walls, and removed during intervals of sunshine. *Lewis Smith, Shotesham Park Gardens.*

SUFFOLK.—Owing to the cold, damp season of last year, the wood on Apple and Pear trees was not thoroughly ripened, hence there were but few flower-buds on some of the trees. There are whole orchards around this district with not an Apple to be seen in them. Plums on walls are an average crop, as also are Cherries, which are of good quality. Peaches and Nectarines on south walls, which were protected with glass coping and fish-nets, have set a good crop. A few trees not so protected have only a few fruits, and the growth is very much blistered. Strawberries have been an over-abundant crop, and the small market growers have obtained good prices. *Thos. Simpson, Henham Gardens, Wangford, Suffolk.*

4, MIDLAND COUNTIES.

BEDFORDSHIRE.—With a few exceptions, the Apple and Pear crops in this district are a failure. After a plentiful show of blossom, the fruits failed to set, and even where they did set, many afterwards dropped. I attribute this to the cold winds during May. The best crops of Apples are on trees that fruit at the ends

of the shoots. Strawberries have been very good. Black Currants are satisfactory, and we have a fair crop of Gooseberries. The soil here is a heavy loam, resting on clay. *F. J. Foster, Cranfield Court Gardens, Woburn Sands.*

— The fruit trees in this district are free from blight and mildew than they have been for several years past. The soil is very sandy, and the subsoil is also of sand. *C. J. Ellett, Chicksands Priory Gardens, Shefford, Beds.*

(To be continued.)

NEW GARDEN WORMS.

ONE of the best-known annelids is that which is usually called the Green Worm. It varies greatly in colour, on which account it has received various scientific names, and has been frequently regarded as differing in species. It seems to have been first described by Savigny in 1826 as *Enterion chloroticum* and *E. virescens*. Two years later Dugès published an account of it under the title *Lumbricus anatomicus*. It was entered in the *Catalogue of British Worms*, 1865, as *L. viridis*, while Hoffmeister and others called it *L. riparius*. Eisen, in 1874, adopted the generic term *Alloobophora*, and called the worm *A. riparia*, but Vejdovsky, in 1884, held that Savigny had described the worm before Hoffmeister, and that *riparius* must give place to *chloroticus*. Hence the worm has for the last quarter of a century been known by most authors as *Alloobophora chlorotica*. Oerley, however, pointed out in 1885 that it differed so widely from the typical *Alloobophora* as to merit a different generic name, and he called it *Aporrectodea chlorotica*. I have gradually come to regard Oerley's position as the true one, and am forced to admit that the Green Worm is as different from *Alloobophora longa* as the starling is from the blackbird.

The Green Worm is common under stones on the margins of horse ponds. It is found in gardens also, and is usually very sluggish and very fat. Anglers reject it because of the fluid which it exudes, and because few fish will take it. The worm is almost invariably coiled into a ring when found, and is so rigid and muscular that it is difficult to relax it. Though varying much in colour and size, the type is generally about 2 inches long, round, with a prominent girdle, and a greenish-coloured body. Hitherto it has always been recognised by the presence of three pairs of papillæ on the under-surface of the girdle. These do not form a band, as in the typical *Alloobophora*, but occur on alternate segments (31, 33, 35)—whence Oerley's name, *Aporrectodea*. Up till the present no other British worm has been found with this character, except *A. cambrica*, Friend, which I described in 1892. This worm is probably a sub-species or variety of *A. chlorotica*, but with marked peculiarities. I think, however, that further research will show that there are allied forms which have been mistaken for the Green Worm, and it is more than likely that the synonyms which I have already given are due to the fact that different worms have been under investigation, but that the characters were not sufficiently defined to enable us to say exactly whether or not new species are involved.

I have received, however, from Kew Gardens a specimen of *Aporrectodea* which, while it might at first sight easily pass for the Green Worm, is certainly a distinct species, and serves to confirm me in the opinion that more than one species has in the past been relegated to *A. chlorotica*. It is just possible that Hoffmeister had a different worm under examination from that which Savigny described. The utmost care is needed in counting the segments, for it is here that one of the chief differences will be found. On account of the close resemblance which the new worm bears to the older species, I have adopted the term *similis* for the specific name. It may be convenient first to describe the species, then to indicate its affinities and differences.

Aporrectodea similis is about 7 cm. or 3 inches in length in alcohol, and has 180 segments. The colour of the living worm closely resembles that of *A. caliginosa*, i.e., it is grey or indefinite, and differs very little in spirits. The body, like that of the Green Worm, is cylindrical, but the tail is slightly flattened. This is suggestive of a different habit of life. Worms with flattened tails usually burrow and feed on the surface of the soil. The tail serves as a holdfast, but the green worm and some others never need such a security against birds. The male pore, even when the tubercula pubertatis are developed, is invisible, since there are no well-developed papillae. Dr. de Ribaucourt has especially emphasised this point as one of great importance in the study of earthworms. Usually, when a worm has papillae on the 15th segment, they develop simultaneously with the tubercula.

The segments five to eight are the largest and widest, and are without secondary annuli. There is a groove on the underside of the prostomium or head, which is inserted only a very short way into the peristomium, and has a transverse furrow. The setae are paired. I am uncertain whether or not the worm exudes any liquid when fixed with alcohol, but I am almost certain that it does not give off a sediment such as the Green Worm and Brandling pour forth from their dorsal pores. When we turn to the girdle, we find it extends over segments 28 to 35, while the tubercula are on 30:32:34 in line with the ventral setae which they also carry.

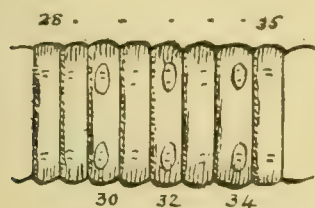


FIG. 35.—ALLOBOPHORA SIMILIS, FR.

Girdle segments (28, 35); three pairs of tubercula pubertatis (30, 32, 34) magn.

Thus the new worm resembles the Green Worm in size and shape, in the pairing of the setae, and in the presence of three pairs of tubercula under the girdle. The differences, however, are such that, when tabulated, they show the two species to be distinct. These may be readily compared as follows:—

APORRECTODEA.

CHLOROTICA, SAV.	SIMILIS, FRIEND.
Colour usually strongly marked.	Grey or indefinite colour.
Giving off turbid fluid.	Little or no fluid exuded.
Length, 5 or 6 centimetres.	Length, 7 centimetres.
Number of segments, 80 to 125.	Number of segments, 180.
Tail cylindrical and narrowing.	Tail somewhat flattened.
Girdle usually from 29 to 37.	Girdle, 28 to 35.
Tubercula on 31:33:35.	Tubercula on 30:32:34.
Male pore on large papillae.	Male pore hardly visible.

It should be remarked that in *A. leoni*, Michaelsen (a species not as yet found in Great Britain) as well as in our own *A. caliginosa*, there are two pairs of tubercula on alternate segments. In fact, one might place these two worms side by side, as I have done with *chlorotica* and *similis*, for while in *A. anaticus* the tubercula are on 31:33, in *A. leoni* they are on 30:32. The occurrence of this interesting pair makes it easier for us to realise that *chlorotica* should also have its double. The internal structure has not yet been studied for want of material. *Hilderic Friend*, St. Asaph, Great Malvern.

NOTICES OF BOOKS.

THE LADYS RECREATION.

THERE is a mystery attached to this volume which has never been elucidated. The title is a very lengthy one, but the following may serve in place of the whole. "*The Ladys Recreation, or the Third and Last Part of the Art of Gardening Improv'd*," by Charles Evelyn, Esq.; to which are added *Some Curious Observations Concerning Variegated Greens*, by the Reverend Mr. Laurence. London: Printed for J. Roberts, near the Oxford Arms, in Warwick Lane, 1717. Price 3s., stitch'd." The reader is informed that this concludes the series of books, of which Mr. Laurence wrote two, and that the latter not only approved the work, but that he favoured the author with two letters, which are printed as an appendix. Several books on gardening had already appeared, having "Recreation" as a common designation; but of these only Mr. Laurence's bore as sub-title, *The Art of Gardening*, and these were devoted solely to fruit culture. *The Ladys' Recreation* does not touch on fruit, but on those denizens of the garden which that author had not already written upon. Nor did he, at this time, intend to do so, for in *The Fruit Garden Kalender*, published shortly subsequent to the book now under review, he states: "To make my two former treatises of gardening compleat, and, if possible, more intelligible, I have been prevailed upon to add this following kalender." Further on he writes: "This leads me to say, for my own sake, and for the sake of the public, that the book called *The Ladys Recreation* could not be published by my approbation, because it was never seen by me till it was in print. Besides, I have reason to think it was an artifice of the booksellers to impose upon the world, under the borrowed name of Evelyn." Some years later, a writer remarks how "the chief rule in buying books is the author's name; since the booksellers have usurp'd the making names as well as titles," and no doubt this is one such instance. There remains to relate that the two letters, one of which contains the "Curious Observations Concerning Variegated Greens," are dated from Yelvertoft, and signed by Mr. Laurence, and, among other evidences of his authorship, it has the unmistakable one of referring to dwarf plants as "reptiles," an expression which he employs in a later work, and one which he alone has ever used. Not improbably, the simple-minded clergyman had been the dupe of "the bookseller." Charles Evelyn's connection with horticulture seems to have begun and ended with *The Ladys Recreation*. We hear nothing of him previous to its publication, and afterwards he is saved from oblivion solely from the name remaining on the title page of this volume.

What is remarkable is that though the subjects discussed receive only the slightest notice, they are, nevertheless, treated fairly, according to the knowledge of the period. The book is divided into sections—florists' flowers, flowering shrubs, tender exotics, trees, &c. Following a chapter on soils, and the best situation for the garden, is a brief description of those flowers the most usual in gardens, of which the Tulip is the first to be mentioned. This is succeeded by remarks on the Carnation and Gilliflower. The varieties recommended are, of red and white, Crown of Bohemia, Emperor, Charles II., Queen Catherine; of red and blush, William the Conqueror; of crimson and white, Empress, Countess Thisbe; of purple and white, Solomon, Prince William, Purple Emperor, Orlinans, Fair Helena, Glory of Worcester; of scarlet and white, Giant, Mayor of London, Romulus, Fair Roxana, Florida, Paramour; black, Pluto; scarlet, Golden Grove, Prince and Princess of Orange, Golden Fleece; blush, Morning Star, Giant Clove, Birtha, Astragon; and purple, The Wiggan.

The directions for layering are good, and rooted layers are directed to be planted not too deep, "a deep plantation being always

destructive." Seeds are advised to be sown in April, "after a shower of rain." "Seeds which produce the greatest variety of flowers are the striped tawnies." These we would to-day call yellow-ground fancies. Carnations grown in flower-pots were to be stood in a pit, "like to a little pond, planted round the edges at top with small pyramid eughs." This is designated an "ornamental passivatory." Then follow in succession notes on Auricula, Anemone, Ranunculus, Hyacinth, and Star-flowers. One is almost startled on reading those on Narcissus and Jonquils, to find this very evident allusion to wild gardening: "This—the Narcissus—is a very common flower, but, considering its great variety, bright colour, and early flowering, the better kinds of them are worthily entertain'd in the garden, especially in avenues, groves, out-hedges, and other shades, which they much delight in." The Indian Daffodil, "which bears many flowers of various colours on one stalk," is a means of exhibiting the author wandering astray. Irises and "Lillies" having been duly honoured, the Pæony is recommended as "very becoming in your flower-pots or chimneys" (fireplaces). Stock Gilliflowers, and Wallflowers are "to be planted against a south wall and secured from frost." The Cardinal Flower is a "pot flower, and very tender." A "strip'd flower'd" Dame's Violet, double, is mentioned one of our lost treasures. The Christmas Rose, "which is good only for flowering at Christmas," is condemned because of its lack of beauty! Among sweet herbs are Gold and Silver and double-flowered Rosemary. The first-named was in great request at weddings. Flowers to be sent a distance were to be "rubbed over with honey and wrapped up in moss." Rosemary comes up again in the part devoted to shrubs. "The dwarf kind of Rosemary, with a double blossom, kept shear'd, is very comely," and "there's your Rosemary, gilded with yellow, and a sort of it variegated with white, very delightful to the eye." The last-named, according to Miller, was entirely lost in the severe winter of 1739-40. The greenhouse plants are extremely few, and among them are the "blue, borage-leaved Auricula" (*Ramondia pyrenica*) and "Bear's-ear Samole" (*Centauria Matthioli*), always difficult subjects to manage unless the out-door position be absolutely correct. Evergreen shrubs and trees occupy a few pages only, and the kalender is similarly abbreviated. R. P. Brotherton.

CALENDAR OF GARDEN OPERATIONS.*

POSSIBLY because of my intimate association with the work of cottage gardeners and allotment holders whose crops I appraise literally in thousands, a copy of the new and enlarged edition of this work, originally prepared by Sir Joseph Paxton, has reached me from the office of the *Gardeners' Chronicle*. Previous editions, which have been in circulation for over 60 years, must have been enormously useful to vast numbers of persons. It was the first of what may be described as modern garden calendars. Under the several months, sound information was given on the raising and cultivation of different kinds of vegetables, fruits, and flowers. That the knowledge imparted was in the highest degree acceptable was proved by the demand for subsequent editions over two generations of time. During the latter part of that long period, the advance in the practice of gardening among the great and ever-growing community of amateurs has been so vast, that it is no wonder that the demand for concise and trustworthy guidance is more and more pressing.

In order to meet the requirements of the present the original matter has been thoroughly revised and the text considerably extended. All kinds of vegetables are well treated upon in the several months. Salient points on the various fruits receive timely cultural reference, and the selection of flowers for gardens,

* *Gardeners' Chronicle* Office, price 7½d. post free.

greenhouses, and windows receive adequate attention. Sweet Peas are treated on up-to-date lines, and an excellent chapter is provided on the selection and cultivation of town trees and shrubs. Definite instructions are given on manures; various examples of crops are admirably illustrated, and advice given on their cultivation. The French system of intensive gardening is given a chapter to itself. Cottagers' shows and the details in their promotion and management are not overlooked.

The work is as complete as could well be imagined. It consists of 170 pages, with an excellent index, and all for 6d. It is just the book for diligent cottagers who delight in gardening, or the thousands of boys who are receiving practical education in school gardens, but young professional gardeners may also find it handy for reference. Because the work is so valuable to numerous cultivators, I cordially wish for it a wide circulation. *J. Wright, V.M.H.*

PLANT NOTES.

BOUGAINVILLEA GLABRA.

This lovely plant is generally treated as a stove climber, but it succeeds best under cool treatment and in full sunshine.

Last winter, I had occasion to move a large plant (in a half paraffin cask) to a Rose house, for it did not succeed well in the stove. During the winter the soil and roots were frozen hard. I fully expected the plant would be killed. Instead of this, however, it has grown stronger, and is now a mass of beautiful, very richly-coloured bracts. This is a proof that the species is much hardier than is generally supposed.

The finest specimen of this plant I have ever seen is at Park Place Gardens, Henley-on-Thames, and when this specimen is in flower it is worth going many miles to see. *J. S. Higgins, Rug Gardens, Corwen, N. Wales.*

The Week's Work.

PLANTS UNDER GLASS.

By JOHN DONOGHUE, Gardener to JOSEPH PICKERSGILL, Esq., Bardon Hill, Weetwood, Yorkshire.

Mignonette.—It is now time to make the first sowing for the spring batch of *Mignonette*. Sow the seeds thinly in small 60-sized pots, filled with equal parts of finely-sifted loam, leaf-mould, and sand. Place the pots in a cool frame, on a layer of ashes, and keep them shaded from bright sunshine until the seedlings become somewhat hardened off. Thin out the young plants previous to repotting them, four to six plants being sufficient for each 5 or 6-inch pot. When the small pots are well filled with roots, afford the plants a shift. During the autumn and winter months *Mignonette* should be placed close to the glass, and a free circulation of air should be allowed at all times. The best varieties for pot culture are those bearing erect flowers and of dwarf habit, such as *Machett*, in various colours, *Bismarck*, *Crimson Queen*, and *Dwarf compacta*.

Bulbs for early forcing.—The bulb catalogues will soon be at hand, when a careful selection of early-flowering varieties should be made. Tulips are almost indispensable. Although small in respect to flowers, the *Duc van Thol* varieties are most reliable for very early forcing. *Mons. Tresor* and *Proserpine* are other excellent varieties that readily respond to early forcing, whilst *Vermilion Brilliant* is always appreciated on account of the scarlet colour of its flowers. *Roman Hyacinths* may be had in flower from December onwards through the season. Early *Narcissi* are useful for house decoration: the varieties *Van Sion*, *Cavantes*, and *Horsfieldii* are amongst the best for general forcing. It is important that bulbs intended for early forcing should be well rooted previous to being put into a cool house to prepare for warmer conditions. The bulbs may be potted immediately they are received and the pots covered with sand to the depth of 2 or 3 inches. Examine them at intervals after they are potted, and remove any that have started into growth. These should be stood in the open in an exposed position until required. Where large numbers of bulbs are cultivated,

shallow boxes are the most convenient receptacles. If pots are employed, they should be plunged to the rims in sand or leaves, otherwise the frost may cause them to crack. Tulips may be brought into a warm atmosphere after they have been placed for about a fortnight in a cool greenhouse. It is not advisable to place *Narcissi* into a warm house until the flower-buds can be seen, otherwise the inflorescences are liable to come "blind."

Lilium speciosum.—This beautiful Lily is now producing an abundance of bloom. As soon as the flowering season is over, place the bulbs in the open for the purpose of ripening them. If it is not convenient to pot the bulbs of *L. Harissii* when they are received, they should be removed from their packages and placed in single layers. Fibrous loam and peat, with a quantity of dried sheep or cow dung, form a suitable compost. Where plenty of space is available, the bulbs should be potted up singly and placed into cool frames until the growing shoots are observed. If required to bloom early, they may afterwards be gradually forced into bloom.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir TREVOR LAWRENCE, Bart., Burford, Surrey.

Sophrontitis grandiflora.—Some plants of this species now commencing to grow may require repotting. They should be grown in shallow pans filled to quite three parts of their depth with drainage materials. A thin layer of compost is all they need to root into, and this compost should consist of *Osmunda*-fibre, *Polypodium*-fibre, and *Sphagnum*-moss in equal parts. The materials should be cut up moderately fine, and some small crocks mixed with them. Each plant should be potted quite firm. Suspend the plants in a moist position over such species as *Odontoglossum crispum*. Afford water rather sparingly until the flower-buds appear, when the quantity may be increased. *S. cernua* and *S. Rossiteriana* may be treated likewise; while the distinct *S. violacea* thrives better in a shady part of the intermediate house, and should be given plenty of root moisture. The well-known *Epiphrontitis Veitchii*, provided the atmosphere is suitable, grows and blooms very freely, and, if several specimens are cultivated, one or other of them will always be in bloom. At the present time these plants are producing a number of aerial shoots from the flowering growths. Such growths may now be taken from the parent plant, potting several together to form nice little specimens. Shallow Teak-wood baskets are suitable receptacles for these divisions. They should be well drained, and only a moderate quantity of *Osmunda*-fibre and *Sphagnum*-moss will be necessary for the plants to root into. Press the compost firmly about the base of the stem, and place the plants near to the roof-glass of the *Cattleya* house, choosing a rather shady position until they are re-established. Sufficient water may be afforded by spraying them overhead several times a day, especially when the weather is warm and bright. At present, our plants have only sufficient new stems to make one or two moderate-sized specimens; but others that are as yet too small, and those which will come later on will be treated likewise when large enough to be removed.

Sopbro-Cattleya and *Sopbro-Lælia* hybrids.—Many plants of *Sopbro-Cattleya* and *Sopbro-Lælia* hybrids are beginning to grow; therefore, if any are in need of repotting or top-dressing, attention should be given them without delay. Grow these plants in pots or shallow pans, and elevate them well up to the light, in a cool position in the *Cattleya* house. The same kind of compost as advised for the *Sophrontitis* will suit them. These hybrids require very careful watering at all times, as the leaves and growths are apt to decay if the soil is kept too damp. Plants that are now at rest should be kept in the intermediate house until growth recommences. Many of these hybrids have rich and brilliantly-coloured flowers. Among the best of them are those enumerated:—*Sopbro-Cattleya Doris*, *S.-C. Chamberlainia*, *S.-C. Blackii*, *S.-C. Thwaitesii*, *S.-C. eximia*, *S.-C. Calypso*, *S.-C. Marcus*, *S.-C. Saxa*, *S.-C. Antiochus*, and *S.-C. warnhamiensis*; *Sopbro-Lælia læta*, *S.-L. Orpetii*, *S.-L. heatonensis*, *S.-L. Gratrixie*, *S.-L. Marriotiana*, *S.-L. Felicia*, *S.-L. Psyche*, *S.-L. valda*, and the dark, purple-red *Sopbrocatlælia Veitchii*, and its variety *Eros*.

Arachnanthe Lowii.—*Arachnanthe* (*Vanda*) *Lowii*, now in flower in the warmest house, thrives well when growing with *Aerides*, &c., but its long, green leaves are very susceptible to injury from the sun, therefore it should always be closely shaded even from very strong light. It delights in plenty of root moisture, and requires but a very thin layer of *Sphagnum*-moss for its roots. The roots, being large and fleshy, are frequently injured by cockroaches, therefore these latter must be sought after and destroyed.

Schomburgkia.—Such *Schomburgkias* as *S. tibicinus*, *S. Sanderiana*, *S. Kimballiana*, *S. Humboldtii*, *S. Thomsoniana*, *S. chionodora*, and its variety *rosea*, should now be given attention, if the old material at the root is getting worn out. They thrive either in pots or shallow baskets, but require a light position well up to the roof-glass in the warmest house. These plants do not require much compost, therefore plenty of drainage should be given, and the soil may consist only of *Osmunda*-fibre. This should be packed quite firmly around the base of the hollow pseudo-bulbs. Whilst making growth, they delight in an abundance of water at the root, especially when they are nearly completing their growth, but afterwards they should be kept rather dry. *Schomburgkia crispata*, *S. undulata*, and *S. gloriosa* are quite distinct in habit of growth from those plants already mentioned, but they require, nevertheless, the same kind of treatment, except that they should be grown in a light position in the *Cattleya* or Mexican house. At the present time their growths are well advanced, therefore repotting should be deferred until later.

FRUITS UNDER GLASS.

By B. GOODACRE, Gardener to Sir ERNEST CASSELL, G.C.B., Moulton Paddocks, Newmarket.

Figs.—The second crop of fruits formed on growths of the current year should now be ripening. Light applications of some mild stimulant should be given to assist the plants at this stage, and where a well-drained border is assured, abundant supplies of water slightly warmed. Syringing should be discontinued, and a little fresh air admitted during the night, even if this necessitates extra artificial heat, as it is important that the atmosphere be not stagnant. It is a good plan, while the Fig is in active growth, to carefully insert a sharp knife half an inch above some of the dormant buds at the base of bare branches, causing a deep score. This will have the effect of causing such buds to push into active growth, thus furnishing the lower part of the tree with shoots. Young Fig trees raised from cuttings and started in the early spring, provided they have been kept growing freely, as advised, should now be furnishing useful fruits. The pots being full of active roots, light and frequent manurings will do good. If the trees are placed on a shelf in an airy house in full exposure to sunshine, the fruits will mature perfectly. When the crop is gathered, care must be taken not to allow the fruit just forming to push forward, for which reason the plants should be stood in a shady position and gradually hardened off, giving sufficient water only to prevent the soil shrinking from the pots, as it is from these young, vigorous trees that next season's early supply of fruits will be obtained.

Figs in pots.—Trees intended for autumn and winter fruiting must be allowed plenty of heat and moisture. The atmosphere should be kept at saturation point by frequent syringings. Remember that the syringing requires to be done with care, and that a skilful person will not need to use nearly so much water as one unaccustomed to the work. Except in the case of rank-growing trees, liberal feeding should be afforded the plants. The fruits will now be as big as small hazel nuts; any that are malformed should be removed and others thinned out if the crop is excessive; but no hard-and-fast rule can be laid down in this matter, as much depends on the size and vigour of the individual tree. Small-fruited varieties, such as *Early Violet*, will need no thinning, and, if the crop is at all backward, these small varieties will be found very useful to fill a gap, as, their flowering period being short, they may be given extra heat to forward the ripening.

Suckers.—Remove all suckers directly they appear, as the sap has a tendency to flow first to these, thus robbing the fruiting branches.

THE FLOWER GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS,
Aldenharn House, Hertfordshire.

Violets.—The present season has been an ideal one for Violets: the plants have made excellent growth, and are remarkably free from red spider. Continue to loosen the surface soil at frequent intervals with the Dutch hoe, and give an application of some patent manure to stimulate growth. Remove any runners that form before these get so large as to weaken the plants.

Herbaceous borders.—In consequence of the rainy weather the plants have made excellent growth this season. Remove the dead and untidy spikes from plants that have passed out of flower, and lift any bulbs, such as English and Spanish Irises, that are nearing the stage of ripening. The borders are particularly bright just now with a variety of subjects, but particularly beautiful are the perennial Phloxes, especially the newer varieties with flowers of delicate tones of colour. The improved varieties of *Chrysanthemum maximum* such as King Edward VII., Earl Roberts, The Speaker, Robinsonii and atratum are also grand acquisitions to the flower borders. *Actæa spicata* is a striking plant now in flower, and many of the Veronicas, especially *V. virgaurea*, *V. spicata*, and its rose, white and variegated variety, are very showy. The white-flowering variety of *Lysimachia clethroides* is particularly neat, both in its flowers and habit of growth. *Lychnis chalcedonica* and its double form provide brilliant colouring: I recently saw in a cottage garden a pleasing combination of this plant interspersed with *Lilium candidum*. *Oenothera Fraseri* and *O. Youngii* have bright flowers, and the varieties of *Galega officinalis* are very pretty. Annuals, too, are making a pleasing display. For freedom of growth and continuous flowering the improved varieties of *Cosmos bipinnatus* are useful, as also are the Shirley Poppies.

Violas.—The named varieties of *Viola* are equally valuable for spring or summer bedding. Continue to peg down the growths; at this season good stout cuttings can be procured that will root readily in a cold frame in ordinary garden soil, to which should be added a sprinkling of road grit. Beyond protection from heavy rains and excessively bad weather in the winter, these, if well rooted, will require but little attention.

Seasonable work.—The planting of many of the bulbs that flower during the mid-winter, such as Aconites, Scillas, Chinodoxas, and Crocuses should be done at the present time rather than at a later date. Early planting enables them to become established and make a good growth, and is in every way more satisfactory than when undertaken shortly before the plants should be in flower. During the past week it has been necessary, owing to the rough winds, to restake many of the trees and stronger-growing plants. Sweet Peas, if in need of extra support, should be attended to at once and, if the plants are in rows, stout poles should be inserted firmly in the ground at intervals of a few yards and a row or two of string stretched between them. Tidy up the rockery, stirring any vacant soil lightly; any spot that has become bare of soil through the heavy rains should receive a top-dressing of suitable material.

THE KITCHEN GARDEN.

By JOHN DUNN, Kitchen Garden Foreman,
Royal Gardens, Windsor.

Cucumbers.—Fire heat is still necessary to maintain a suitable temperature and the atmosphere must not be allowed to become too humid or stagnant as the weather is so dull. Fresh air should be admitted on all favourable occasions to sweeten the atmosphere and harden the growths which should be properly regulated, thinned and stopped, overcrowding being an evil that cannot be too strongly condemned. Established plants should, as far as possible, be stopped at the second joint beyond the fruit, and all injured leaves and deformed fruits removed. When Cucumbers have attained a suitable size they should be cut and stored in a cool, clean cellar where they will keep fresh for a few days. Topdress the plants as often as roots appear above the surface of the bed, using a mixture of three parts turfy loam and one part horse droppings. Young plants raised from seed sown a month ago should now be ready for planting out. They may be planted in small mounds placed on a

gentle hot-bed, 4 or 5 feet apart; nothing will be gained by planting closer. Seeds for the winter batch should be sown at once in order that the plants may be ready for planting in the first week in September. Dickson's All-the-Year-Round is a suitable variety for late sowing.

Potatoes.—Early Potatoes will now be ready for lifting, as few, if any, varieties will benefit by being left in the ground after this date. Those that are required for seed purposes should be left undisturbed until the tubers are quite ripe. The practice of selecting unripe tubers for seed purposes and laying them on the ground in the scorching sun is a bad one; it is far better practice to plant a sufficient number at the ordinary time to allow of a few being left for seed purposes. All early Potatoes on which the skins are set may be lifted now, and the ground afterwards planted with Coleworts or some other crop for winter use.

Cabbage.—Another sowing of Cabbage seed should be made now, as from this sowing the principal plantation will be made. These plants will stand a rough winter better than those raised from seeds sown three weeks ago, although, if the winter is mild, those of the early sowing will come into use when most winter vegetables are running to seed.

Mushrooms.—The house intended for furnishing the autumn and winter supplies of Mushrooms should be thoroughly cleansed and washed with hot lime at the earliest opportunity. If the horse droppings are prepared now there should be Mushrooms ready to gather about the middle of October. The preparation of the bed is of far more importance than many persons imagine. The droppings should be collected with as little delay as possible, and placed in an open shed where they should be turned every second day. When almost ready for removal to the Mushroom house they should be placed a little closer together until the temperature reaches 85°; they should then be turned and rammed tightly together. The depth of the bed should then be 14 inches and level on the top, so that water may be applied easily. When the temperature drops to 80° the spawn should be inserted 2 inches deep, and the whole bed made perfectly light and even. In a day or two afterwards a covering of new loam should be placed over the surface of the bed, and the loam should be beaten lightly. The temperature of the house at this season should be about 60°, and frequent syringings are necessary to ensure a humid atmosphere. To keep up an unbroken supply a new bed should be prepared every three weeks.

Autumn sown Onions are ready for lifting. In order to have the bulbs thoroughly ripened they should be turned daily for at least a fortnight. When they are removed to the Onion loft they will require to be carefully examined, that they may be kept as late into the autumn as possible.

THE HARDY FRUIT GARDEN.

By A. R. SEARLE, Gardener to the Marquis of NORTHAMPTON, Castle Ashby, Northamptonshire.

Peaches and Nectarines.—Examine these trees frequently, and pinch all lateral growths back to the first leaf. To obtain fruits of good colour and flavour they should be well exposed to the light and air, therefore it may be necessary to fasten back some of the foliage round about the fruits; where the trees are in a very healthy condition and the foliage is rather dense, a few leaves near to the fruits may be removed altogether. Trees carrying heavy crops of fruit will be greatly assisted if given an occasional watering of liquid manure from the farmyard, or where this is not available some approved soluble fertiliser, washing the fertilising properties of the same into the soil with clear water. When the fruits have safely passed the stoning period, stimulants may be more freely given to the trees, as food is most essential then to assist the development of the fruits. Continue to tie in the growths as they develop, removing all superfluous shoots to avoid overcrowding. Thoroughly syringe the trees with clear, soft water about four o'clock each afternoon when the weather is fine, in order to keep the foliage clean and healthy. Immediately the fruits show signs of ripening all feeding and syringing must be discontinued. In some localities the early varieties of Peaches, such as Alexander, Duke of York, Amsden June, and Hales' Early will be

ripening; the trees should be frequently looked over for ripe fruits, and placed in the fruit room until required. Carefully-gathered fruits will keep in a good condition for a week or ten days in a cool, airy fruit room.

Apricots.—The fruits of these will now be swelling fast. See that they are not injured through being wedged between the branches and the walls or growing against nails. Apricots come finer and ripen much better when partially shaded with a little foliage. Do not take the fruits from the trees until they are thoroughly ripe, or they will be found to lack good flavour. A sharp look-out must be kept for earwigs and woodlice, as these pests often damage the finest fruits.

Newly-grafted trees.—These should be examined, as the scions are growing freely. Loosen the ties where necessary, and remove all suckers and shoots that develop from below the union.

General work.—Keep all ripening fruits well protected from the birds. Fruit trees on walls should be vigorously syringed with clear water each afternoon during bright weather, in order to keep insect pests in check. Trees of Sweet Cherries devoid of fruit should be given a thorough cleansing with some good insecticide applied with force by means of a garden engine. All nets no longer required this season for the protection of fruit should, when dry, be folded up neatly and stored away in a dry place. Continue to pinch all secondary shoots on Cordun Apple and Pear trees, and fasten the leading growths to the walls or trellis.

THE APIARY.

By CHLORIS.

Further notes on swarming.—Generally speaking, if a colony is headed by a queen under two years old, there is less tendency to swarm than when the stock is headed by an older queen. Sometimes, despite every effort on the part of the apiarist, they will swarm. He may have applied every known preventive, such as giving plenty of ventilation by raising the brood chamber on the stand, extending the brood chamber by giving frames each containing a full sheet of foundation, giving plenty of space above to store in advance; by extracting all honey from the combs in the brood chamber; and even going to the length of removing frames of brood and replacing frames filled with foundation. These efforts may fail, and the beekeeper naturally asks, "What shall I do?" There is one more plan that may be tried, for the bees will doubtless be sulky and doing no work in the supers just at the very time when they ought to be bringing in nectar plentifully. The plan is to fit up frames with full sheets of wired foundation and take out all the old frames, brushing back the bees with a goose quill, and thus artificially swarming them. The frames of brood may be utilised to strengthen weaker colonies, or may be given to a weak stock. This has been found very effectual, and it reduces the inclination to swarm. The colony being strong will work with a will and store in the supers, especially if the shallow frames contain drawn-out comb, for there will be no space in the brood chamber for storing until the foundation is drawn out.

Casts or "after swarms."—These may be prevented if the beekeeper at once attends to the matter by cutting out all queen cells, except one, as soon as the first swarm is thrown. If he has not done this when the first "cast" comes out, the hive should be examined and all remaining queen cells cut out, leave the cast in the skep until the next morning, but let it stand near the parent hive during the period of waiting, and early next day return it. It is too late now for "casts" to be worked up into useful colonies, but earlier in the season a cast, headed by a vigorous young queen, will often produce a valuable colony for the next season, provided the weather is good and there is plenty of forage.

Alighting boards.—It is an excellent practice at this season, when the bees are so busy and returning to the hives very heavily laden, to extend the alighting board if it is narrow. This can often be done with very little difficulty, if a wide and rather heavy board is made to form a continuation of the fixed alighting board by the aid of a few bricks, and packed with pieces of tile or slate.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Special Notice to Correspondents.—The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

Letters for Publication, as well as specimens of plants for naming, should be addressed to the EDITORS, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

APPOINTMENTS FOR THE ENSUING WEEK.

WEDNESDAY, AUGUST 10—
Exmouth Fl. Sh. (2 days).

THURSDAY, AUGUST 11—
Malmesbury Fl. Sh. Taunton Fl. Sh. Holyport Fl. Sh.

AVERAGE MEAN TEMPERATURE for the ENSUING WEEK deduced from observations during the last Fifty Years at Greenwich—62.3°.

ACTUAL TEMPERATURES:—
LONDON.—Wednesday, August 3 (6 P.M.): Max. 68°; Min. 53°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London—Thursday, August 4 (10 A.M.): Bar. 29.8; Temp. 67°; Weather—Bright sunshine.

PROVINCES.—Wednesday, August 3; Max. 64° Cambridge; Min. 57° Ireland S.W. coast.

SALES FOR THE ENSUING WEEK.

FRIDAY—

Imported and Established Orchids in variety. Also Forcing and other Bulbs, at 67 & 68, Cheapside, E.C., by Protheroe & Morris at 12.45.

Pollination and Fruit-Formation.

The correspondence which has taken place recently in these columns on the question whether it is necessary to pollinate Melon flowers in order to produce fruits raises a number of problems of both scientific and practical interest. Before proceeding to discuss certain of these problems we will consider briefly what is known with respect to the process of pollination and of fertilisation in plants.

It is generally known that in the majority of plants, pollination, that is, the deposition of pollen on the stigma of a flower, is an essential preliminary to fertilisation, and hence to seed- and fruit-formation. It is a matter of indifference with respect to fertilisation whether the pollen is placed on the stigma by the agency of insects or wind, or whether the pollination is effected "artificially," that is, by the gardener himself. All that is necessary is that pollen in sufficient quantity and of the right kind shall be placed on the right spot at the right time.

If these conditions are fulfilled, the pollen grains germinate. Each grain sends out a delicate tube, which grows parasitically in the tissue of the pistil, and pushing its way down the style, enters the cavity of the ovary, so directing its growth that its tip comes into the closest proximity with an ovule. These preliminaries achieved, the act of fertilisation begins. In this act, some of the living substance of the germinated pollen-grain escapes through the soft wall of the tip of the pollen-tube, and entering the ovule, fuses with the egg-cell which that ovule contains. The minute mass of protoplasm which is formed by the fusion of egg-cell and the male generative cell derived from the pollen tube gives rise to the embryo of the seed.

So much for the normal course of events: plants are not lacking, however, in which seed-production occurs, although pollination, and hence fertilisation, have not been effected. That is, plants exist which set seed, although no pollen falls on the stigmas of their flowers. Such plants are said to be parthenogenetic. The phenomenon of parthenogenesis occurs in the higher flowering plants, as well as in lower plants. Species of the water Fern, *Marsilea* are capable of developing embryos parthenogenetically, and so also, among flowering plants, are the Dandelion, certain Hawkweeds, species of *Alchemilla*, and doubtless many others.

Among Orchids an equally remarkable state of affairs must be assumed to exist, namely, one in which pollination is necessary, though fertilisation is unnecessary for seed-production. *Zygopetalum Mackayi* is an example. Unless the flowers of this Orchid are pollinated, seed is not set. But, in order to cause *Zygopetalum Mackayi* to set seed, it is not necessary to pollinate it with pollen of this species. The plant produces seed when the pollen used is that of species of *Odontoglossum*, *Lycaste* or *Oncidium*. But—and this is the remarkable fact—no matter which of these pollens is used, the seeds produced give rise not to hybrids, as we should expect, but to *Zygopetalum Mackayi*, and nothing else. Whence we are driven to conclude that, although pollination has taken place, fertilisation has not. This example is valuable in throwing light on the significance of the process of fertilisation. It leads us to the view that by fertilisation two main effects are produced: one, the sexual fusion referred to already; the other, a stimulus to the growth of the egg-cell. In the generality of cases, both effects are evident, but in such a case as that of *Zygopetalum Mackayi* only the stimulus-effect is produced, and that effect is strong enough to induce the ovules to develop into seeds. Further, this interpretation throws some light on another normal result of fertilisation, namely, fruit-formation. As everybody knows, the consequences of pollination and fertilisation are not confined to the ovules, but are felt also by the ovary, and, in many cases, by other parts of the flower as well. In other words, fruit-formation as well as seed-formation is generally a consequence of pollination and fertilisation. How the presence of the pollen-grain on the stigma and that of the pollen-tube in the tissues of the style bring about the changes in the ovary-wall which occur during fruit-formation is quite unknown. We must suppose that the germinating pollen-grain exercises a chemical influence on the tissues of the pistil, and that the effects of this chemical influence are transmitted to the other parts of the ovary and to adjacent structures. Whether this is so or not, the fact remains that in the great majority of flowering-plants pollination and fertilisation are essential conditions for fruit-formation. As a rule, if pollination does not take place, seed is not formed, nor does the fruit develop. But just as parthenogenetic plants provide us with exceptions to the general rule that fertilisation is essential for seed-production, so parthenocarpic plants supply exceptions to the rule that fruit-production is a consequence of fertilisation. As the term indicates, parthenocarp means the production of fruits by unpollinated plants.

Examples of such plants are the Cucumber, certain varieties of Apple, Pear and probably Grape and Banana.

Inasmuch as in these cases pollination is not necessary for fruit-formation, it is possible to obtain seedless fruits. Thus, in the case of the Cucumber, the fruit forms whether the flowers are pollinated or whether they are not; but inasmuch as it is not a parthenogenetic plant, seeds are produced only when pollination and fertilisation have occurred. Up to the present time, there is no good evidence that the Melon is capable of fruit-formation without pollination, though, in default of definite experimental evidence, he would be a rash man who asserted dogmatically that no races of Melons are capable of parthenocarp. Into the question of seedless fruits of Apple and Pear we need not enter now, for the subject was treated in detail in a leading article which appeared in these columns a few years ago (May 18, 1907). Suffice it to say that seedless Apples exist, but that coreless Apples are yet to seek. Their discovery is, however, only a matter of time and experiment.

OUR SUPPLEMENTARY ILLUSTRATION represents the west side of Belvoir Castle, with the Regent's tower, the flag tower, and the chapel. The photograph was taken from the Duke's Walk, and illustrates what is known as the duchess's favourite view, because it was improved by JANETTA, the wife of the seventh Duke of Rutland, who also placed a seat there for visitors to rest and enjoy the prospect. Near the base of the declivity, in the centre of the picture, the principal drive to Grantham is situated. The trees include many very fine specimens of Oak, intermixed with a few Yews and Firs. Rhododendrons and Azaleas also abound, whilst the ground in many places is brightened in spring with clumps of Narcissi and other early-flowering plants and shrubs.

WISLEY TRIALS.—The Rev. W. WILKS, Secretary of the Royal Horticultural Society, writes as follows:—"A sub-committee of the Fruit and Vegetable Committee, consisting of Messrs. ALEX. DEAN, V.M.H., W. BATES, E. BECKETT, J. JAKES, G. HOBDAV, J. DAVIS, and OWEN THOMAS, V.M.H., visited Wisley on June 30, to examine early Peas, when the following varieties were recommended for an Award of Merit. These were placed before the full Committee on July 5, when the awards were approved, the Council confirming them at their meeting on July 19. The varieties were:—Hundredfold, sent by Messrs. SUTTON & SONS; Laxtonian (re-selected), Messrs. CARTER & Co.; Early Duke, Messrs. CARTER & Co.; and Victor, Messrs. J. VEITCH & SONS."

APPOINTMENT FROM KEW.—Mr. ARTHUR BROOK CULHAM, a member of the gardening staff of the Royal Botanic Gardens, Kew, has been appointed by the Secretary of State for the Colonies a curator in the Agricultural Department of Southern Nigeria.

VISITORS TO KEW.—It is announced that the number of visitors to the Royal Botanic Gardens, Kew, on Monday last was 129,000.

SOUTH-EASTERN AGRICULTURAL COLLEGE.—We are informed that the Mercers Company has made a donation of 30 guineas to the South-Eastern Agricultural College library for the purchase of books of reference. The Fruiterers' Company has presented a very fine copy of that scarce work, *The Herefordshire Pomona*, and the Carpenters' Company a work on forestry, to the college library.

MR. CHARLES DIXON, gardener to MARY Countess of ILCHESTER at Holland House, Kensington, has recently undergone an operation for abscess on the liver. The operation has been successful, and Mr. DIXON is progressing satisfactorily.

MR. JOHN RAMSBOTTOM has been appointed, states *Nature*, an assistant in the Department of Botany, British Museum. Mr. RAMSBOTTOM was lately exhibitor of Emmanuel College, Cambridge, and Robert Platt biological research scholar, Victoria University, Manchester. He will devote himself to the fungi.

BACTERIAL BLIGHT OF APPLE, PEAR AND QUINCE TREES.—A recently-issued Bulletin of the Ontario Department of Agriculture deals with this disease, which has been known for a long time under various names, such as fire blight and twig blight. The malady has totally destroyed many Pear orchards in Canada and the United States, and it has been also very destructive to Apple and Quince trees. The leaves of affected trees become brown and scorched, the dead leaves often remaining on the trees all the winter. The damage is usually seen in summer between May and September, at which time apparently healthy branches may die off in a day or two. Young fruits are attacked and turned into a soft slime, which ultimately shrivels and dries to a brown or blackish mass. The main limbs and trunks of the trees are sometimes destroyed, the bark becoming brown or purplish, and covered with cracks or blisters, from which an amber-coloured gum exudes. The disease is caused by a minute, motile bacterium, *Bacillus Amylovorus*, which is found in enormous numbers in the dying tissues of affected trees, and in the slimy substance which flows from the bark. Some observers have attributed the spread of the disease to wind-borne bacilli carried in the dry, infected gum or slime, while others believed the inoculation to take place through the agency of bees, flies and other insects which visit the blossom. Both these methods may be partially responsible for the distribution of the parasitic bacteria. However, the observations and experiments of Mr. D. H. JONES, of the Ontario Agricultural College, have shown that the organisms are largely spread by two aphides, *Aphis mali* and *Schizoneura lanigera*, in the Apple, and by the bark-boring beetle, *Scolytus rugulosus*, in the Pear. The pruning knives, saws and chisels used by workmen in orchards have also been proved to be effective carriers of the disease germs. Systematic cutting out and burning of all diseased wood as soon as observed, together with the adoption of means to keep down aphides and borers, will do much to reduce the disease. At present the disease appears to be confined to North America.

COCOA BUDDING.—According to the *Port of Spain Gazette*, Mr. W. E. BROADWAY, Curator of the Tobago Botanic Station, exhibited two specimens of budded Cocoa at a meeting held at Trinidad on June 21. In the course of his remarks, Mr. BROADWAY said that, ever since it was published by the Jamaica Department of Agriculture that in that island the successful budding of Cocoa had once been done, trials were made again and again to repeat the operation, without success. Nevertheless, a young student at the Botanic Station had demonstrated, under his instructions, the successful budding of Cocoa, being the first one to do so in these islands. The specimen was budded on March 4, 1910, and gives now a height of about 6 inches. There was also exhibited another specimen of Cocoa by Mr. JAMES BLACKMAN, foreman of the Botanic Station; this was budded by him on April 29, and it is now about 1 inch in height.

VIOLAS IN BATTERSEA PARK.—Those of our readers who are interested in Violas as bedding plants, and chance to be in London during the months of August and September, cannot do better than visit Battersea Park, where, at a short distance from the superintendent's house, at the Bridge Road entrance, they will find a display of the best varieties of Violas in bloom. In the panel garden the Violas are planted in blocks of 10 to 12 feet in length, and 4 feet in width, the colours of the varieties being pleasingly blended, each block consisting of one variety. Wood-pigeons have a mischievous habit of picking off the foliage of Violas, and in places where these birds exist in large numbers, as at Battersea, netting should be suspended over the beds till the plants gain strength or come into bloom. The Viola plants in this park, however, are not protected by nets. The following varieties were noticed:—Admiral of the Blues, deep blue; Admiration, bright blue, very free in blooming; Alexandra, pure white, a large flower, finely rayed; Archie Grant, rich, indigo blue; Ardwell Gem, sulphur yellow, compact and free; Blue Cloud, white, with a blue edge; Bronze King, brown, with a darker centre; Charm, pale lavender; General Baden Powell, orange, very fine, and without rays; Glencoe, lower petals of a mahogany tint, upper ones of a copper shade, very distinct; Isolda, bright yellow; Kitty Bell, a fine shade of lavender, a free and continuous flowerer; Maggie Mott, soft mauve, very free; Molly Pope, a deep-yellow self, early and prolonged bloomer; Mrs. J. H. Rowlands, of a shade of rose, and fine form; and Redbraes Yellow, of a deep-golden tint.

ADVISORY COMMITTEE ON AGRICULTURAL SCIENCE.—The Committee appointed to advise the Board of Agriculture and Fisheries on all scientific questions bearing on the improvement of agriculture held its first meeting in Committee Room A, House of Lords, on the 29th ult. In the absence of Lord CARRINGTON, Sir THOS. ELLIOTT, K.C.B., permanent secretary of the Board, presided, and explained the policy of the Board in appointing the committee. The committee subsequently discussed the best methods of carrying out the work entrusted to them, and appointed sub-committees to deal with particular sections of the subject.

FRUIT-GROWING IN BRITISH COLUMBIA.—As showing the great care taken by the Government of British Columbia to prevent the introduction of insect and other pests into the orchards and gardens of the province, Mr. J. H. TURNER, the Agent-general for the Province, has sent us extracts from a report issued in June, 1910, by the chief inspector of fruit and other trees. The report is as follows:—"I have the honour to submit my report of imported nursery stock inspection at the Provincial Inspecting Station in Vancouver for the months of January, February, March and April of the present year. Number of trees and plants inspected in the months of January, 592,002; February, 103,184; March, 767,152; April, 1,255,718—total, 2,718,056. I quite expect that the Fall shipments, when added to the above, will bring the number up to 4,000,000 of trees and plants imported into the province during 1910. This will exceed by 173 per cent. the quantity imported any previous year in our history, and is a good indication of the rapid development of horticulture in British Columbia. When we consider that every tree and plant included in the foregoing statement was individually inspected, it will be seen that the labour involved in inspecting and repacking was a great burden, but so carefully has the work been done that I have not received a single report of any package having gone wrong, nor has there been a single mix-up reported during the season. The

importation of French nursery stock has been very heavy this season, and as it is now properly regarded as being the most dangerous of all nursery stock because of the prevalence of the brown-tail and gipsy moth infection, the stock has to be very carefully inspected. We found many nests of the browntail this season, and for the first time in the history of nursery-stock importations into British Columbia, we discovered two colonies of the caterpillars of the gipsy moth. I may say that these dangerous pests have already caused an expenditure of millions of dollars in Massachusetts and the adjoining New England States. The insects have now spread to the forests of those States so that the control, much less the suppression, of the pests is now practically impossible. With a knowledge of these facts and conditions, we could not afford to take the slightest chance of the pests being introduced into British Columbia, so that if there have been complaints of delay at our inspecting station, there has been good and sufficient cause. In addition to the inspection of imported nursery stock, I am having all the local nurseries throughout the province carefully inspected, not a tree is permitted to be delivered to the planter until it has been inspected. From October 1, 1909, till April 30, 1910, some 16,000 trees grown in our local nurseries were condemned and destroyed for infections of the same character condemned in imported nursery stock. I am thankful to report that this system of local nursery inspection is exceedingly popular with the fruit-growers, who properly regard it as a necessary additional protection."

HYBRID VERONICAS.—We have received from Mr. LINDSAY (late of the Royal Botanic Gardens, Edinburgh), an interesting hybrid *Veronica* of shrubby habit, for which he proposes the name *V. × myrtifolia*. Edinburgh has long been noted for its shrubby Veronicas, and Mr. LINDSAY himself has a hybrid named after him (see *Gardeners' Chronicle*, 1898, ii., p. 331, fig. 97). This new plant, *V. × myrtifolia*, is the result of a cross between *V. Balfouriana* (seed bearer) and *V. salicifolia* (pollen-bearer). It is a pretty bush of rather dense habit—inherited from the female parent—with evergreen, ovate-oblong leaves 1 inch long by $\frac{3}{8}$ inch diameter and pointed. The flowers are pure white, $\frac{3}{8}$ inch in diameter, and borne densely on erect, slender racemes 3 inches to 4 inches long. Judging from the specimens forwarded to us by Mr. LINDSAY, this new hybrid flowers with great freedom, and wherever it proves to be hardy should make a useful addition to shrubs flowering as late as mid-July. Another hybrid *Veronica* sent us by Mr. LINDSAY is *V. × edinensis*, the result of a cross between *V. Hectori* and *V. pimelioides*, the former being the seed-bearing plant. It is certainly much nearer to the female parent in habit, although differing from it in having short, stiff, spreading leaves, on stouter stems, those of *V. Hectori* being all pressed close to the stem on the mature branches. The presence of *V. pimelioides* is not evident either in the foliage or flowers, the latter in the hybrid being white. On comparing it with New Zealand specimens, it is found to be closely allied, if not identical, with wild specimens of *V. epacridea*, a species that has not so far been known in cultivation. The plant doing duty in gardens under that name is quite distinct from the true plant, and is most likely of hybrid origin, with *V. loganioides* as one of its parents. All three of the above-mentioned species are found in the South Island, and if the parentage of the present plant can be verified it rather points to *V. epacridea* being a natural hybrid that has been produced artificially by Mr. LINDSAY. The specimens sent show a plant of compact habit, and very floriferous, with dense spikes of white flowers.

LONDON OPEN SPACES.—The Middlesex County Council has, says the *Times*, decided to contribute £5,000 of the £20,000 required to purchase 60 acres of the Grovelands Estate, Winchmore Hill, for a public park. The council has also resolved to contribute £1,000 towards the acquisition of The Grange, Kilburn, as an open space, although the property, which is $8\frac{1}{2}$ acres in extent, is actually within the County of London.

THE LATE MR. J. B. CARRUTHERS.—Respecting the lamented death of Mr. CARRUTHERS (see p. 70), we have received the following letter from our old correspondent, Mr. J. H. HART:—"Coblentz Avenue, Port of Spain, July 18, 1910.—Mr. J. B. CARRUTHERS, who was

THE WILD GARDEN.

THERE is no commoner delusion among amateurs than that a wild garden requires less attention and work than the ordinary borders. The lamentable results that have followed upon numerous attempts to reconcile the competing interests of native and exotic growths have amply proved that the majority of exotics require constant tending to enable them to hold their own amid the luxuriant undergrowth of the woodlands. This is especially the case in humid, western districts, where the growth of summer vegetation is exceedingly rank. But there are certain plants of such vigorous constitution that they may be trusted to take care of themselves. Such are *Campanula lactiflora*, *celtidentifolia*, and *Van Houttei*; the *Montbretias*, several of the

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

THE HARDY FRUIT CROP IN HERTFORDSHIRE.—In your report on the condition of outdoor fruit crops, I notice there is nothing in Hertfordshire like the state of things here. There is not one Pear, nor one Apple, nor one Plum, but 30 or 40 Peaches, and a few Apricots (on the part of a tree which is trained against the chimney of furnace). Some of my neighbours are in the same plight, and others not quite so bad. Since writing the above, my gardener tells me he has found two Apples and two Pears! *Albert G. Sandeman, Presdals, Hertfordshire.*

THE LABOUR PROBLEM.—It is much to be hoped that W. W. will join our ranks and demonstrate the effect of skilled management, coupled with efficient labour, a conjunction which he appears to think has never yet been accomplished. However this may be, he may take it for granted that no possible combination can improve matters for the worker so long, as he puts it, "there are three men for two jobs." What is needed is to improve the conditions of the trade until the employer needs three men where he has two now, and then the worker will get what he wants without running round to get help in obtaining it. With regard to taxation, I would remind Mr. Thompson that my letter spoke of "nurseries," not small holdings or jobbing gardeners, so that the £50 limit does not enter into the question. As to the assessment of nursery land, I also spoke from experience, and could obtain instances, substantiating my statement, from every quarter of the country of the doubling of rates on land used as nurseries. One member of the trade took land in three widely-separated districts for growing special subjects, and in each case had to fight an expensive lawsuit to resist an immensely-increased assessment. *Chas. E. Pearson, F.L.S.*

INCREMENT VALUE DUTY.—On p. 87 there appears a letter from Mr. H. Stuart Thompson (in reply to one from Mr. C. E. Pearson, as to the position of suburban nurserymen under the new land taxes), in the course of which he writes:—"Like numerous other persons, your correspondent does not seem to realise that the small holder, occupying a holding not exceeding 50 acres or £50 in annual value, is specially exempted from any increment value duty, whether on agricultural or building values." In view of the pending universal valuation, it is of such vital importance that there should be no misunderstanding on the subject of liability for increment value duty, that I feel sure Mr. Stuart Thompson will forgive me if I venture to correct two or three slips in the above statement, as he was evidently quoting this extraordinarily difficult Act of Parliament from memory and was therefore probably away from his library at the time. It is clear from the Act that the small holder, as such, is only specially exempt from increment duty if his total holding of land in this country (a) does not exceed 50 acres, (b) does not exceed per acre an average *capital* or selling value (not annual value, as stated) of £75 (not £50, as stated), (c) is not occupied with a dwelling-house valued for income tax under Schedule A at more than £30 per annum, and (d) has been occupied and cultivated by the *owner* for 12 months before the claim for duty arises. All these four conditions must be complied with to secure the exemption of the holding. All other "agricultural" land must bear increment duty, unless the land has no higher value than its market value (at the time) for "agricultural" purposes. Hence the danger to suburban nurserymen *H. Morgan Veitch.*



FIG. 36.—LILIUM GIGANTEUM IN SIR HERBERT MAXWELL'S GARDEN AT MONREITH.

recently appointed Assistant Director of Agriculture of this island, died here on the 17th (yesterday) of abscess of the lungs. He was ill for over six weeks, following on a tour of the Island of Tobago. Great regret is felt here at the early death of so promising a member of the Tropical Staff of the Agricultural Department. He had the best possible attention from three leading doctors and the constant care of a loving wife. The circumstance has been a heavy blow to the newly-constituted Department of Agriculture."

SALE OF ORCHIDS AT BRISTOL.—Messrs. EDWARD T. PARKER & Co. sold at their mart in St. Stephen Street, on the 28th ult., the Hill Court collection of Orchids, by order of C. E. FRANK, Esq., of Yatton.

Monkshoods, *Astilbe Davidii*, *Senecio Clivorum*, &c.

Two such plants not often seen outside the garden proper are *Lilium giganteum* and *Funkia Sieboldii*. The giant Lily (*L. giganteum*) shown in the photograph (see fig. 36) may be raised in thousands from seed, which it produces very abundantly. The plant illustrated is flowering in the eighth year from sowing. The plantain Lily (*Funkia Sieboldii*) also bears a great quantity of seed, but increases so fast from the root that it is hardly worth while to sow it. It forms, in these gardens, a permanent bordering to a woodland path with *Montbretia* in the foreground. It is too coarse a plant for the flower garden, but its great glaucous leaves show to perfection in the wild ground, and rabbits avoid both it and the giant Lily. *Herbert Maxwell, Monreith, Wigtownshire.*

THE PLANE TREE AND THROAT TROUBLES.—It has long been suspected that the Plane tree causes throat and lung troubles, and the notes by Lord Walsingham and Dr. Henry (see p. 348) still further increase the suspicion. Several instances have come under my notice of throat troubles being attributed to the presence of the Plane tree, and a notable case in which some of the occupants of an official residence at a well-known public institution in the North-West of London have been obliged to leave their abode, owing, it is thought, to the presence of Plane trees around the buildings, is at present being inquired into. Not only do the seeds give off the spicule that so irritate the throat and eyes, but it is pretty evident, from recent observations, that the minute hairs given off by the pubescent leaves at an early state of their growth are likewise dangerous to health. *A. D. Webster.*

SEEDLING DELPHINIUMS.—I send some flower sprays of seedling Delphiniums grown in my garden. They are the produce of seed saved two years ago from a plant of a good blue variety growing in the school garden at Appleton Roebuck, near Bolton Percy, in this county. There are five distinct shades of colour amongst them. The year the seed was saved no other Delphinium was growing within a mile of the plant they were taken from. Would it be likely that Bees carried foreign pollen to the plant in question, or is it a mere instance of seminal variation? There is a semi-double variety amongst them. In the garden one mile away there were no double or semi-double varieties growing at the time named. *H. J. C., Yorkshire.*

PERPETUAL-FLOWERING CARNATIONS IN THE OPEN GROUND. The cultivation of perpetual-flowering Carnations as border plants is becoming widely recognised in this country, and I believe the time to be not far distant when they will, in some measure, supersede our English border varieties. Some growers will differ from me on this point, but I am acquainted with several large gardens where this is already becoming the case. Border Carnations have to be cultivated for 11 months out of 12, and their flowers last only two or three weeks. How does this compare with the perpetual-flowering Carnations, which not only bloom all the winter, but will do so continuously throughout the summer when planted in the open garden. At the end of May I planted out 200 plants, which had flowered all the winter in 7 inch pots, and since then we have continuously cut a large number of blooms from them. They are planted on a north border, as a slightly-shaded position suits them best. I do not think there is a better way than this of disposing of old plants, and I can strongly recommend anyone to give the system a trial. Some growers raise plants especially for outdoor culture, and the present is a good time to insert cuttings for this purpose. They should be wintered in an atmospheric temperature which does not fall below 45°. If they are potted into 5-inch pots, they will then be well-furnished plants, ready to commence flowering when planted out in May. *J. Gardner, Batsford Park Gardens, Gloucestershire.*

LABELLING HARDY PLANTS.—This subject is more or less always present with horticulturists in both private and public gardens and parks. Nowadays, with the increased interest in hardy plant culture, it is needful that the visitors to the public parks should be given means of ascertaining the names of all the plants growing therein. I have a pamphlet bearing upon this subject prepared by Mr. A. J. Allsop, the parks superintendent at Leeds. During the 10 years or so he has been in Leeds, very great improvements have been made in re-arranging and replanting the various parks under his charge, but especially at Roundhay, which may be termed the centre of the whole. The pamphlet has been prepared to meet the requirements of the many visitors to this particular park. The names of the plants are arranged in alphabetical order under their natural orders, with brief references to cultural details and country of origin. Prefixed to each name there is a number which refers to a similar number prominently fixed on a label in front of the growing plant. For instance, supposing anyone wanted to know the name, &c., of the handsome blue-flowering plant at the back of a wide border under

No. 20, on referring to his pamphlet he would see under the heading Boraginæ: *Anchusa italica* (Bugloss)—common soil, sunny border. The price of the pamphlet is 1d. *Yorkshire Gardener.*

SPIRÆA MENZIESII TRIUMPHANS is quite the handsomest of the tall-growing red-flowered shrubby kinds; the spikes sent are only the secondary ones from last year's shoots; those produced on the shoots of this season will come later and will be much longer. *S. superba* is a robust-growing plant, with dense heads of rose-coloured flowers, and *S. notha* var. *superlatifolia* has dense heads of blush flowers. *T. Smith.*

DOUBLE-FLOWED LYCHNIS DIURNA.—The occurrence in Nature of double flowers, of undoubted wild origin, is so rare, that I am sending you some of the Red Campion (*Lychnis*



FIG. 37 — DOUBLE-FLOWED LYCHNIS DIURNA: COLOUR OF FLOWERS PURPLISH-ROSE.

diurna) (see fig. 37), which I found a few days ago in the grounds here. The plant was growing in the midst of a mass of the ordinary single forms, and the soil has probably never been disturbed. *A. A. Pettigrew, Hewell Grange Gardens, Redditch.*

EFFECTS OF LAST WINTER UPON VEGETATION. The more tender plants did not get damaged here so much last winter as in the winter of 1908-09, when the species which were seriously injured were *Camphora officinalis* and *Metrosideros*. We have the following species in cultivation against a south wall:—*Leptospermum grandiflorum* and *L. bullatum*; *Edgeworthia chrysantha*, *Bignonia grandiflora*, *B. Cherere*, *Quillaja saponaria*, *Abutilon vitifolium* (exceptionally fine this year), *Dendromecon*

rigidum, *Buddleia Colvillei* (in flower), *Coronilla glauca*, *Solanum jasminoides*, *S. crispum* (a mass of flowers 18 feet high in the open), *Myrtus Ugni*, *M. officinalis*, *Senecio* (grayi), *S. rotundifolia*, *Azara integrifolia*, and *A. microphylla*; *Daphne japonica* (in flower March 20), a fine plant of *Abutilon vexillarium*, *Kadsura chinensis*, *Mandevilla suaveolens*, *Edwardsia grandiflora*, *Lagerstræmia indica*, *Fendlera rupicola*, *Olea fragrans*, *Ceanothus Veitchianus*, *Ephedra altissima*, *Callitris robusta*, *Passiflora cœrulea*, *Lonicera tragophylla*, *Trachylopernum jasminoides* (harmd). *Mandevilla suaveolens* is now flowering freely, several plants of *Sollya heterophylla* (small) went entirely to the bad, and this more on account of wet than frost. I notice one of your correspondents mentions this plant, and then *Clerodendron trichotomum*; but there is a wide difference in the hardness of these two plants. The *Clerodendron* flourishes here like a Larch, and will soon be a mass of flower in the open. *Magnolia Campbellii* is on the outside border, sheltered, of course, but this flowered again for the third year in succession. We have several plants, one a very large specimen, 30 feet high, which has not flowered yet. The *Pittosporums* and *Philesia buxifolia* seem to stand the winters well. When mentioning *Rhododendrons*, neither of your correspondents mentions the tender varieties or species. *R. Falconeri* and *R. cinnabarinum* pass through the winters well; it is the *Aucklandii* and *Edgeworthii* types that sometimes fail. *Eucryphia pinnatifolia* and *Desfontainia spumosa* do not get injured at all, and both species are in bloom. *Fabiana imbricata* has flowered well, as also has *Olearia Gunnii*, *O. macrodonta*, *O. myrsinoides*; *Crimum Moorei* and *C. Powellii*. *Choisya ternata* has done remarkably well this season, and will soon be flowering a second time. *Ozothamnus thyrsoides* has flowered finely; *Fremontia californica* seems to stand well and has flowered freely; and one plant is close on 18 feet high. *Erica arborea* and *E. lusitanica* have done excellently. Two seasons ago some freshly-planted specimens were destroyed by 24° of frost, but this I think was caused by their removal. There were several hundred, but they were not all damaged, and many are now growing well from the base. Several hundred Palms escaped frost, and appear quite at home. Bamboos were not injured, *Arundinaria nitida* curls up somewhat during frost or cold winds, but it opens again beautifully. Hundreds of *Camellias* were unharmed and they flowered well. *Lilium Hansonii* has flowered beautifully, and *L. pardalinum* is simply grand. *L. auratum* types are already 8 feet in height and strong. It is a good thing to plant a few *Liliums* every year, as in time some of them become exhausted. I find the *L. speciosum* types need more assistance than the others; after two years they appear to want a rest, and therefore some of the flowers should be pulled off in order that the plants may grow away more freely. *W. A. Cook, The Gardens, Leonardslee, Horsham, Sussex.*

BOG SLIDES. The reports of further threatened bog slides in Ireland, which occur every now and again after prolonged wet weather and, by sweeping over lower levels, cause great destruction of property and even loss of life, provoke a feeling of surprise that no steps seem to be taken to prevent them. The risk is well known, and the principles which govern such catastrophes should be equally known. The slide is due to an accumulation of water on peat formations where hollows exist. In such hollows moss and other semi-aquatic growths accumulate by upward growth and basal perishing, such as the familiar *Sphagnum*-moss exhibits. It is indeed largely due to this particular species of moss that in time a deep, spongy moss is produced. Under ordinary weather conditions, this spongy moss is only saturated here and there, much of the rainfall being evaporated and some of it draining away so that the whole mass of peat retains sufficient cohesion to maintain its position. A long spell of wet weather, however, saturates and softens it, and since, from the very fact that a slide is induced by mere pressure of gravitation, the bog must be formed on a declivity, it is abundantly clear that a system of drainage, even by relief channels being cut, would prevent those lower levels from being invaded by a destructive avalanche of peaty matter when the pent up water finds a

weak spot and follows the line of least resistance. It is the water and the water alone which causes these débâcles. The peat mass itself may form to a practically unlimited extent as a solid body if means are devised for preventing the water from accumulating, and, wherever there is such an incline as always seems to be present where these catastrophes occur—since a slide on a level is an absurdity—it would seem that the simple precaution of cutting a few trenches in the dry seasons, at known perilous points, should obviate the risks by providing safety valves which, by affording an early vent for accumulating moisture, would remove the initial cause of disaster. Nothing, however, of this kind appears to be done until it is too late, for once "the bog begins to move," a visit of the county surveyor to the spot to investigate and report on the matter to the county council is little likely to save from disaster the unfortunate farmers in the track of the impending deluge. In the case we have in view, the locality was visited only two years ago by a disastrous slide of a bog, so that the risk of further slides should have been foreseen, as similar conditions must have been known to exist by those in the vicinity, whose farms were threatened with destruction. It would be interesting to know what the local authorities did on the last occasion in the way of preventive measures, not indeed of the slide itself when it commenced its irresistible course, but in the shape of rational attacks upon the primary cause wherever the danger was known to exist. *Chas. F. Drury, V.M.H., F.L.S.*

CULTURAL MEMORANDA.

SCHIZANTHUS.

THE best results in growing these plants are obtained by sowing the seed in autumn. I have found August 1 to be the most suitable date for sowing, as the plants get established before the short days, when growth is very slow. The potting compost should consist of loam, leaf-mould, and sand in equal parts, and the materials should be passed through a $\frac{1}{4}$ -inch sieve. This compost should be placed in pans, and it should be watered a few hours previous to sowing the seed. The seeds being very small, they only need a very light covering of soil. Pieces of glass placed over the pans will prevent excessive evaporation, and the seed pans may be put in any cool structure. As soon as germination takes place, keep the plants near to the glass in order that the seedlings will make a sturdy growth. When large enough to handle, prick the seedlings out into pans, putting them 2½ inches apart, and again keep them near the glass. After the plants have become about 4 inches high, pot them off separately into 3-inch pots, using a compost containing a good proportion of leaf-mould.

If the grower should possess ainery with a shelf on the back wall near the top ventilators, he cannot do better than grow his *Schizanthus* in that position. They will then have a dry, airy position, and an abundance of light, which will increase as the vine leaves fall. Each plant will need a neat stake and frequent attention to tying. *Schizanthus* plants are apt to damp off, especially in the early stages of growth, unless very great care is exercised in regard to watering. They should be allowed to become dry before water is again given them. Pinch the shoots occasionally in order to promote a bushy growth.

When the pots become nicely filled with roots, another shift is necessary, and on this occasion four plants may be placed in an 8-inch pot; one or four plants may be used according to individual taste, but if large, bushy plants are desired, then it is as well to employ four. A similar compost to that employed at the previous potting may be used, with the addition of finely-broken charcoal, being careful not to pot too firmly.

The most critical time is past when this potting has been done, and growth will be quicker as the days lengthen. Stake and tie the shoots neatly, using thin Bamboo canes, and again pinch the shoots. For the final potting, which should take place at about the latter end of February,

10-inch pots may be used, and a somewhat coarser compost of the same nature as before, with just a sprinkling of soot.

Place the plants in a greenhouse or other cool structure, and they will soon cover themselves with many-hued flowers. The *Schizanthus* is very useful for house decoration, as the flowers last quite a month in good condition. If the plants are kept in a greenhouse when in flower they will need to be shaded from sunshine.

The most popular strain is that known as *S. Wisetonensis*, which has a compact, bushy habit, and exhibits a wide range of colouring. *S. hybridus grandiflorus* has a dwarf, somewhat pyramidal habit, and large flowers. *A. W. Proudlock*.

TREES AND SHRUBS.

SPECIMEN TREES AT COBHAM HALL.*

ON December 13 a visit was paid to Cobham Hall, near Gravesend, for the purpose of selecting planks of various kinds of timber, which the Earl of Darnley had promised to present for the Forestry Museum. The estate has long been famous for well-grown timber, and competent authorities credit it with producing the largest Ash in the country. About the garden, a number of fine ornamental trees were observed, particularly *Ginkgo biloba*, *Quercus Phellos*, *Q. Ilex*, *Taxodium distichum*, *Sophora japonica*, *Sequoia gigantea*, *S. sempervirens*, *Cedrus Libani* and *Liriodendron Tulipifera*. In the deer park and plantations, however, the largest trees were noted. The ground is rather heavy and well suited for Ash, Oak, and Sweet Chestnut, in fact a large area of land in the neighbourhood is given over to coppice wood, in which Ash and Sweet Chestnut figure largely. Among the park trees conifers were rarely noted, whilst comparatively few were to be seen in the plantations. Hornbeam grows to a large size, while the same may be said of Beech and Sycamore.

Time did not allow of measurements being taken of the large trees, but Mr. Scriven, the estate agent, kindly furnished me with the dimensions of the following trees, which were taken a short time ago. The girth, except where otherwise stated, was taken at 5 feet from the ground:—

	ft.	ft. in.
<i>Quercus Ilex</i> ...	75	15 10
" <i>Phellos</i> ...	83	9 3
<i>Sophora japonica</i> ...	81	10 4
<i>Ginkgo biloba</i> ...	73	9 5
<i>Liriodendron Tulipifera</i> ...	75	8 6
<i>Sequoia sempervirens</i> ...	88	
" <i>gigantea</i> ...	77	14 7
<i>Liquidambar styraciflua</i> ...	75	
<i>Taxodium distichum</i> ...	78	7 4
<i>Acer Pseudo-platanus</i> ...	102	17 10
" " ...	91	15 3
<i>Tilia vulgaris</i> ...	104	13 2
<i>Fraxinus excelsior</i> ...	144	14 6
" " ...	144	11 9
" " ...	128½	12 6
" " ...	79	14 9
" " with curiously twisted trunk, known as the "Twisted Ash" ...	116	17 8
<i>Carpinus Betulus</i> ...	82	11 6
" " ...	82	8 8
<i>Fagus sylvatica</i> ...	97	12 6
<i>Castanea sativa</i> ...	92	14 9
" " ...	82	14 2
<i>Quercus pedunculata</i> ...	91	17 2
" " ...	76	12 10
<i>Ulmus campestris</i> (at 4 feet) ...	91	17 1
<i>Juglans regia</i> ...	76	13 6
" <i>nigra</i> ...	67	8 2
<i>Populus nigra</i> ...	96	11 4
<i>Æsculus Hippocastanum</i> (at 4 feet) ...	87	14 0
<i>Prunus Avium</i> ...	91	12 10
<i>Quercus Lucombeana</i> ...	81	11 10
<i>Cedrus Libani</i> ...	99	15 5
" " (at 2 feet) ...	86	19 2

* W. D. (Kew Bulletin, No. 3, 1910)

SOCIETIES.

ROYAL HORTICULTURAL.

AUGUST 2.—The inexpediency of holding a meeting immediately after a Bank Holiday was strikingly illustrated in the very meagre exhibition on Tuesday last. The display was the smallest ever held in the Society's Hall, and there were scarcely any visitors. It is clear that exhibitors do not desire a flower show to follow a popular holiday, as the preparation of the exhibits entails work on the day previous to the show. Another reason for their dislike of such a show is the fact that any trouble and expense entailed is but thrown away, there being so few visitors. The ORCHID COMMITTEE recommended one Award of Merit and one Botanical Certificate. The FLORAL COMMITTEE recommended three Awards of Merit. The FRUIT AND VEGETABLE COMMITTEE confirmed awards made at Wisley to some varieties of Potatoes, Peas and Lettuces.

Few persons attended Mr. A. Clutton-Brock's lecture at the 3 o'clock meeting, although the subject, "Small Rock-gardens," was of much interest.

Floral Committee.

Present: W. Marshall, Esq. (in the Chair); and Messrs. H. B. May, W. J. Bean, T. W. Turner, Jas. Douglas, J. F. McLeod, C. Blick, Chas. E. Pearson, J. T. Bennett-Poe, Chas. E. Shea, W. P. Thomson, E. H. Jenkins, George Paul, and Wm. Howe.

Messrs. H. B. MAY & SONS, The Nurseries, Upper Edmonton, showed finely-flowered plants of *Campanula isophylla* and a batch of *Ixoras*. (Silver Flora Medal.)

Mr. CHAS. BLICK, Warren Nurseries, Hayes, Kent, staged a choice group of border Carnations, in about 70 varieties, all, save one, raised at Hayes. (Silver Banksian Medal.)

Mr. WALTER EASLEE, Danecroft Rosery, Eastwood, Essex, exhibited bunches of his seedling Carnations named Scarlet Perfection.

Mr. JAS. DOUGLAS, Edenside, Great Bookham, showed five new varieties of Carnations.

Messrs. DOBBIE & Co., Edinburgh, showed some choice annuals, including two fine Marigolds, named Sulphur Queen and Orange King. There were also a selection of Scabiosa of the type known as Dobbie's Tall Double, Antirrhinums, Sweet Peas, and *Cosmos bipinnatus*. (Silver Banksian Medal.)

Messrs. JAS. VEITCH & SONS, LTD., King's Road, Chelsea, displayed annuals, such as Candytufts, Lupins, and Marigolds, also vases of *Pentstemon Newbury Gem*.

Mr. FRANK LILLEY, St. Peter's, Guernsey, showed *Montbretia rosea*, *Sparaxis pulcherrima*, *Gladioli*, and spikes of *Hyacinthus candicans*.

Messrs. KELWAY & SON, Langport, Somerset, exhibited over 300 spikes of *Gladioli*, with large, bold flowers in many hues, ranging from creamy-white to purple. (Silver Flora Medal.)

A floor group of *Phlox decussata* and *Chrysanthemum maximum* was made by Messrs. G. PAUL & SON, Cheshunt. (Silver Banksian Medal.)

Messrs. W. WELLS & Co., Merstham, Surrey, showed a selection of *Violas*, border *Phloxes*, *Poppies*, *Pyrethrums*, *Gaillardias*, and other hardy flowers. (Bronze Flora Medal.)

Messrs. HARKNESS & SONS, Bedale, Yorkshire, displayed spikes of *Verbascum* bordered by a row of *Gaillardias*.

Mr. G. REUTHE, Hardy Plant Nursery, Keston, Kent (Bronze Flora Medal), and the GUILDFORD HARDY PLANT NURSERY (Bronze Banksian Medal) displayed garden flowers.

AWARDS OF MERIT.

Carnation Mrs. J. A. Reynolds.—An orange-buff-coloured border variety, a little deeper in colour than *Elizabeth Schiffner*. The plant is free in flowering, the blooms being produced on stiff stems and with non-splitting calyces.

Carnation Forester.—A large, yellow ground Fancy, with markings of chocolate and red. An erect, free-blooming variety, well suited for the flower border. Both these were shown by Mr. JAMES DOUGLAS.

Phlox Frau Antonin Buchner.—A fine, white variety of border *Phlox*, growing about 3 feet high. The individual flowers measure 1½ inch in diameter, and are of great purity. Shown by Messrs. W. WELLS & Co., LTD.

Orchid Committee.

Present: Harry J. Veitch, Esq. (in the Chair); and Messrs. Jas. O'Brien (hon. sec.), de B. Crawshaw, F. J. Hanbury, C. H. Curtis, W. H. Hatcher, H. G. Alexander, W. H. White, H. Ballantine, Gurney Wilson, and J. Charlesworth.

DE B. CRAWSHAW, Esq., Rosefield, Sevenoaks (gr. Mr. Stables), sent *Odontoglossum Nerissa* (nævium × crispum), an elegant white hybrid, profusely spotted with ruby-red; *O. Astarte* (Harryanum × tripudians), closely following *O. Harryanum* both in colour and form; *O. Amnensis* (Crawshayanum × cristatellum), and a pretty sulphur-yellow-tinted form of *O. ardentissimum*.

J. S. MOSS, Esq., Wintershill House, Bishop's Waltham, exhibited his new *Odontoglossum Maritima* (septrum × Rolfeæ), the sepals of pale sulphur-yellow, with broad bands of chocolate brown; the petals creamy-white, blotched with chocolate brown, and a broad white lip, having one large purplish blotch in front of the yellow crest, and small, rose-purple-coloured lines on each side.

H. S. GOODSON, Esq., Fairlawn, Putney (gr. Mr. G. E. Day), showed *Odontoglossum crispum* *Herbertii*, a variety with white ground colour, the purple at the backs of the segments showing to the surface, and having a profusion of purple spots on all the segments; also the scarlet *Odontioda Goodsoniæ Herbertii*.

WILLIAM THOMPSON, Esq., Walton Grange, Stone (gr. Mr. Stevens), showed a distinct form of *Masdevallia coccinea* (Harryana), with white flowers, slightly tinged with yellow.

Mr. H. A. TRACY, Amyand Park Road, Twickenham, showed as *Catasetum Traceyanum* (provisionally named) a very distinct whitish-green *Catasetum* from Peru. The species is probably new to gardens, but the Committee deferred making an award until the name had been verified.

Mr. E. V. LOW, Orchid Nursery, Vale Bridge, Haywards Heath, showed *Lælio-Cattleya Lambauiana rubra*, a distinct *Brassia-Cattleya*, &c.

Mons. MERTENS, Ghent, showed a small selection of hybrid *Odontoglossums* and an *Odontioda*.

Messrs. J. & A. A. McBEAN, Cooksbridge, sent a magnificent plant of an excellent variety of *Cattleya Germania*, with 11 finely-developed flowers on one spike.

AWARD OF MERIT.

Cattleya Warscewiczii Othello, from Lieut.-Col. Sir GEORGE L. HOLFORD, K.C.V.O., Westonbirt (gr. Mr. Alexander).—A magnificent and richly-coloured variety of the small-flowered class, including *C. Warscewiczii saturata*, and having features suggestive of *C. Hardyanæ*. The sepals and petals are coloured rosy lilac, the large lip being mauve-purple, with a small yellow spot on each side of the tube, which has a slight gold veining.

BOTANICAL CERTIFICATE.

Dendrobium Bullenianum, from Sir TREVOR LAWRENCE, Bart., K.C.V.O., Burford (gr. Mr. W. H. White).—A very distinct species from the Philippine Islands, with short, many-flowered racemes of orange-yellow flowers, having purple stripes, and each an inch in length. It was originally introduced by Messrs. Hugh Low & Co., and described by Professor Reichenbach in 1862. *D. erythroxanthum*, Rehb. f., *Gard. Chron.*, 1874, 11, p. 162, is a closely-allied species.

CULTURAL COMMENDATION

to Mr. W. H. White (Orchid grower to Sir Trevor Lawrence, Bart., K.C.V.O.), for a fine specimen of *Oncidium incurvum* with 27 branched spikes of its pretty white and rose-coloured flowers. The plant has been in the Burford collection for upwards of 25 years.

Fruit and Vegetable Committee.

Present: G. Bunyard, Esq., V.M.H. (in the Chair); and Messrs. J. Cheal, C. G. A. Nix, G. Wythes, J. Willard, J. Davis, G. Hobday, and A. Dean.

The superintendent, Mr. S. T. WRIGHT, exhibited from the Wisley gardens a dish of superb fruits of the old Barrington Peach. This grand old Peach was raised in Surrey fully 100 years since, and is unexcelled by any modern variety for beauty and flavour.

Messrs. SPOONER & SONS, Hounslow, Middlesex,

sent fruits of Early Red Margaret, or, as sometimes called, Summer Margaret Apple.

Messrs. DOBBIE & Co., Mark's Tey, sent 10 perfect examples of their stock of the glaucous and singularly-pointed Winningstadt Cabbage. Messrs. DOBBIE also showed their green, curled Scotch Victoria Kale.

From the Society's gardens, Wisley, came Peas, Potatoes, and Lettuces, grown under trial, and recommended for awards by a deputation from the Committee.

AWARDS OF MERIT.

Pea Prince of Peas (SUTTON & SONS).—The pods are short and densely filled. The variety is very free in cropping.

Pea Prestige (JAS. VEITCH & SONS).—A very fine, long-podded Pea, of medium height, and a heavy cropper.

Pea Money Maker (KING & Co.).—A variety of the Ne Plus Ultra type. The pods are well filled, but of medium height, and the variety is an abundant cropper.

Potato Selected Ashleaf (BARR & SONS).—A good type of this well known variety.

Potato Walker's Seedling (Messrs. BREWER).—A white kidney variety of excellent edible and cropping qualities.

Potato Faithful (W. SMITH & SONS, Aberdeen).—A white kidney variety, having a rather yellow flesh, of most excellent quality.

Potato Dons Favourite (Messrs. DENS).—A white-fleshed kidney Potato. Very dry, and of pleasant eating.

Lettuces (Cabbage): Supreme (SUTTON & SONS).—A large, massive, somewhat curled variety. *Heartwell* (SUTTON & SONS), *Green's Favourite* (BARR & SONS), *White Favourite* (BARR & SONS), and *Leehead*.—These four were all of the All-the-Year-Round type, and they resembled each other very closely.

HORTICULTURAL CLUB.

ANNUAL OUTING.

JULY 28.—On this date, at the invitation of N. N. Sherwood, Esq., the members of this club spent a most enjoyable day at Prested Hall, Kelvedon, Essex. The party numbered about 40. Leaving Liverpool Street Station by special saloon at 10.55, Prested Hall was reached about 1 o'clock, after a short drive from Kelvedon Station. The pretty grounds, diversified by streams and tastefully laid out, were first inspected, and their lunch was partaken of to the accompaniment of a military string band. A local elocutionist subsequently gave some recitations in the Essex dialect. After lunch the party divided, the majority being driven some five miles or so to Merle, where a splendid mansion of the Tudor period was visited and an old church inspected, containing some quaint tombs surmounted by recumbent statues of its founders. The Rector kindly gave a most interesting summary of the history of the building. The rest of the party devoted their attention to the trial grounds, where a very large area of land is devoted to seed raising and experimental studies. On the return of the two parties, tea was partaken of, and the party afterwards proceeded to Kelvedon Station en route for Liverpool Street.

NATIONAL VEGETABLE.

AUGUST 2.—A meeting of the committee was held at the Horticultural Hall on the above date. The Chairman (Mr. A. Dean) reported that a further report on the autumn-sown Onion trials and the spring-planted early Potatoes was in course of preparation, and would shortly be published. The Treasurer (Mr. G. Wythes) made a statement as to the finances. It was decided to allow all firms subscribing two guineas to exhibit at the annual show. The charges of admission to the show on September 28 were fixed at 1s. between 1 p.m. and 6 p.m., and 6d. from 6 p.m. to 8 p.m. The Westminster and St. Thomas's Hospitals will be invited to collect all vegetables left by competitors. The arrangements as to judges, stewards and other business connected with the show were deferred till the meeting on August 30.

BEBINGTON HORTICULTURAL.

JULY 29, 30, AUGUST 1.—This society's show was held this year in conjunction with the Wirral Agricultural Society, at Bebington. Two large tents were filled with horticultural exhibits.

In the class for a group of miscellaneous plants in and out of bloom, T. G. WILLIAMSON, Esq., Arrowe Hall (gr. Mr. D. McPhee), was well ahead with a light and handsome exhibit. Messrs. JOHN R. SAMUEL and C. H. CÆSEY, Birkenhead, were placed 2nd and 3rd respectively.

The best collection of four stove and greenhouse plants was shown by J. HERRON, Esq., Cloughton (gr. Mr. W. Hemming), *Lilium auratum* being especially fine.

For one stove or greenhouse plant, Mr. D. McPHEE won with a *Dipladenia*; 2nd, J. H. KENION, Esq., Egerton Park (gr. Mr. E. M. Stokes).

Two exotic Ferns were best shown by Mr. S. BELL, Bebington, who was well ahead with fine specimens of *Nephrolepis*; 2nd, Mr. D. McPHEE.

Mr. W. HEMMING won the 1st prize for three *Pelargoniums*. Other 1st prize winners in the plant classes were:—J. J. EVANS, Esq., Higher Bebington (gr. Mr. W. H. Beer), for *Begonias*; Mr. E. M. STOKES, for *Fuchsias*; and Mr. HEMMING, for six stove or greenhouse plants, six table plants, and two *Coleuses*.

The best table decorations were exhibited by Mrs. H. RUTTER, Miss NEWSHAM, and W. L. NICKELS, Esq. (gr. Mr. M. Buckland), the first two employing Sweet Peas and Mr. BUCKLAND Roses.

Mr. D. McPHEE led for nine bunches of herbaceous cut flowers, followed by Messrs. M. BUCKLAND, Mr. W. HEMMING won in both classes for Cactus-flowered *Dahlias*, and Mr. J. COOPER, Port Sunlight, excelled with Carnations.

There were three classes for Sweet Peas, for twelve, nine, and six varieties respectively. Mr. G. FAULKNER, Chester, won the 1st prizes in the largest and smallest classes, with Queen of Norway, Aurora Spencer, Marjorie Willis, Nancy Perkin, and other varieties. Mr. S. BELL led for nine varieties.

For 12 spikes of *Gladioli*, Mr. D. McPHEE was placed 1st.

In the Rose classes, J. WATSON TODD, Esq., Spital (gr. Mr. S. Sweeney), led for twelve varieties and for six varieties. In the class for 12 double blooms of *Begonias* W. S. EDWARDS, N. Esq., Sidcup (gr. Mr. T. Rabbit), staged well, winning the 1st prize. Mr. W. G. COKER and Mr. A. F. STONE were 1st in the classes for Pansies and Asters respectively.

FRUIT.—For a collection of six kinds, Mr. D. McPHEE was to the fore. Mr. S. BELL, Higher Bebington, won for two bunches of Black Hamburgh Grapes. Mr. M. CLOVER, Wollaston, had the best Madresfield Court Grapes and the best two bunches of white Grapes in Muscat of Alexandria. Other prize-winners for fruits were:—Mr. CLOVER, Peaches; Mr. HEMMING, Nectarines and Melons; Mr. W. BARTON, Prenton, Cheries, dessert Apples, and culinary Apples; and W. K. FERNIE, Esq., Thornton Hoagh (gr. Mr. W. Piper), Pears.

VEGETABLES. Mr. JOHN WILLIAMS won in the class for eight distinct varieties. Mr. W. PIPER led for Tomatoes, Cucumbers, and French Beans; Mr. M. BUCKLAND for Peas, Cabbage, and Lettuce; Mr. J. WILLIAMS for round Potatoes, Carrots, Beet, and Turnips; Mr. W. HEMMING for long Potatoes, Celery, and Cabbage Lettuce; Mr. D. McPHEE for Cauliflowers and Onions; and Mr. E. M. STOKES for Vegetable Marrows.

Some interesting non-competitive groups were staged. Messrs. YOUNG, West Derby, showed Carnations; Mr. W. HENDERSON, Oxtou, a group of miscellaneous plants; Mr. W. L. PATTISON, Shrewsbury, cut Pansies and Violas; Messrs. JONES BROS., Mount Nursery, Conifers, Pansies and Dahlias; Mr. R. WRIGHT, Liverpool, Sweet Peas; Messrs. T. & E. CROKER, cut flowers and plants; Messrs. BEES, LTD., Liverpool, cut flowers and floral designs; Mr. W. ROWLANDS, Waverley, a collection of clipped trees and shrubs; Mr. H. MIDDLEHURST, Liverpool, Sweet Peas, hardy flowers, and vegetables; Messrs. DICKSONS, Chester, Sweet Peas; and Mr. J. BRAMHAM, Liverpool, pergola and arches.

LEAMINGTON AND COUNTY.

JULY 27, 28.—The second annual flower show of this Society, held in the spacious Victoria Park, Leamington, on the above dates, was a pronounced success. The weather on the opening day was fine, and the visitors thoroughly appreciated the spectacle provided for them. This exhibition showed an advance over the one held a year ago, both in the number and quality of the exhibits.

Without attempting to particularise much, reference may be made to the magnificent Sweet Peas shown by Mr. T. JONES, of Ruabon, the Roses from Mr. GEORGE PRINCE, of Oxford and from THE KING'S ACRE NURSERY CO., Hereford; the beautiful dinner tables decorated with flowers and the groups of plants arranged for effect. Fruit and vegetables were grand.

Honorary exhibits were numerous, and many of them displayed much taste in arrangement. Increased interest was given to this year's show by the fact that four challenge cups, valued at 25 guineas each, and one valued at 15 guineas, were offered for competition. The Society is to be congratulated upon having as its chairman Alderman Holt, Mayor of Leamington, to whose zeal and organising ability so much of the success of the Society is due. The Mayor is ably assisted by Mr. J. T. Hayes, the show superintendent, upon whose shoulders fall the many unobserved details incidental to the smooth working of the show. The secretarial duties are carried out by Councillor H. V. Richards and Mr. Leo Rawlinson.

PLANTS (OPEN).

Eleven classes were provided for plants, and there was competition in all of them. In the principal class, for a group of plants arranged to face two ways on a space of 20 feet by 12 feet, along the centre of the tent, there were three competitors, viz., MESSRS. JAMES CYPHER & SONS, of Cheltenham; Sir GEORGE H. KENRICK, of Edgbaston (gr. Mr. J. V. Macdonald); and Mr. W. VAUSE, of Leamington, to whom the prizes were awarded in the order named. The blending of colours in the 1st and 2nd prize groups was good throughout. Both groups were constructed on pretty much the same lines. The centrepieces consisted of a cork arch or bridge, on which choice foliage and flowering plants were arranged, and handsome Palms marked the highest point. The corner mounds were in proportion to the centre, and were clothed with Codiaums, Dracenas, Selaginellas, Ixoras, Fuchsia triphylla, Orchids, &c. The spaces between the mounds were filled with Ferns, Begonias, Caladiums, Codiaums, Silver-leaved Abutilons, Orchids, Clerodendron fallax, Kalanchoe flammea, Lilioms, Verbenas, and similar plants.

In a class for twelve stove and greenhouse plants (not fewer than four to be in flower), in pots not exceeding 10 inches in diameter, MESSRS. JAS. CYPHER & SONS were again placed 1st. They showed two well-coloured Codiaums, two plants of Acalypha Sanderiana, two Kentias, and one plant each of Davallia polyantha, Clerodendron Balfouri, Allamanda Williamsii, Ixora Pilgrimii, Statice profusa, and an unnamed Acalypha. 2nd, Mr. W. VAUSE, who showed good Codiaums, Ixoras, and Bougainvilleas. The 3rd prize was won by Mrs. RAYSON, Newstead House, Leamington (gr. Mr. W. G. Jones), who secured 1st prizes for (1) three well-flowered pyramid Fuchsias, (2) six large profusely-flowered Gloxinias, and (3) three zonal Pelargoniums.

ALFRED HOLT, Esq., J.P., Oaklands, Leamington (gr. Mr. C. Finch), won the 1st prize in a class for three Coleus plants. 2nd, J. H. BURLEY, Esq., Brandon Parade, Leamington (gr. Mr. H. J. Finch).

Mr. W. VAUSE won the 1st prize in a class for the best foliage plant with a well-coloured Codium, and the 1st prize in another class reserved for one plant in flower. He showed a rather small, well-flowered Epacris.

J. H. BURLEY, Esq., Leamington (gr. Mr. H. J. Finch), had the best three Ferns, dissimilar; Mrs. CHAPPELL, Wellesbourne Hall, Warwick (gr. Mr. T. Parry), being 2nd. The best named exhibitor brought the best half-dozen table plants, consisting of five beautifully-coloured Codiaums and a narrow, dark leaved Ixora. 2nd, Mr. W. VAUSE.

Of the six contestants in a class for six tuberous-rooted Begonias, Mr. W. ELLIS MAS-

TERS, Warwick, was placed 1st, with particularly good double-flowered varieties; 2nd, Mr. GEORGE ROGERS, Leamington.

ROSES (OPEN).

A new and important class was included for an exhibit of Roses on a table space of 12 feet by 4 feet. The 1st prize was a Challenge Cup value 25 guineas, presented by the High Sheriff of Warwickshire (J. F. Shaw, Esq., J.P.); 2nd, Silver Flora Medal; 3rd, Silver Banksian Medal. There were several splendid exhibits, constituting quite a show in themselves. After a very close contest, the coveted trophy was won by Mr. GEORGE PRINCE, Longworth, Faringdon, Berks., who had a collection of good flowers well arranged. The tall background was formed of Rambler Roses, and in front masses of Edu Meyer, Lyon Rose, Hugh Dickson, and Laurette Messimy were noteworthy. Near the front, four tall, slender stands, decorated with Mme. Abel Châtenay, Viscountess Folkestone, Mrs. David McKee, &c., were effective. The 2nd prize was awarded to Messrs. GUNN & SONS, Olton, Birmingham, for a grand group, in which tall arches, rather thinly clothed with Rambler Roses, formed a pleasing background, and receptacles of various shapes and sizes, filled with beautifully fresh flowers, completed a very pretty exhibit. A few of the best varieties were Mme. Ravary, Princess Marie Mertschensky, Lady Ashtown, Harry Kirk, Edu Meyer, Louis van Houtte, and Mrs. Theodore Roosevelt. 3rd, Mr. W. T. MATTOCK, Oxford, who showed large masses of Mrs. W. J. Grant, Countess of Gosford, Gottfried Keller, Simplicity, Lyon Rose (extra good), Mme. Abel Châtenay, and Theresa Bevan.

Twenty-four blooms, distinct.—Of the nine exhibits placed before the judges, the 1st prize was awarded to THE KING'S ACRE NURSERY CO., Hereford, who had a particularly fine lot of flowers. A selection of the best varieties included A. K. Williams, Comte de Raimbaud, Alice Lindsell, Mrs. John Laing, Gustave Piganeau, Horace Vernet, Mildred Grant, Bessie Brown, Mons. E. Y. Teas, Frau Karl Druschki, Alfred Colomb, and Dean Hole. 2nd, Messrs. PERKINS & SONS, Coventry, with an even lot of flowers, in which Mrs. David McKee, Lyon Rose, Ulrich Brunner, Gustave Piganeau, Mildred Grant, and Dr. O'Donel Browne were of superior merit. 3rd, FRANK DENNISON, Esq., Cranford, Leamington (gr. Mr. H. Skeys).

The best half-dozen H.P.s (one variety) were Frau Karl Druschki, shown by THE KING'S ACRE NURSERY CO., Hereford; 2nd, Messrs. PERKINS & SONS, Coventry, with clean, shapely flowers of A. K. Williams.

Mr. GEORGE PRINCE, Oxford, had the best collection of 12 Tea Roses, distinct. His blooms of Golden Gate, Comtesse de Nadaillac, Muriel Grahame, Mrs. E. Mawley, and Medea were very meritorious. 2nd, Mr. W. T. MATTOCK; 3rd, THE KING'S ACRE NURSERY CO.

Mr. GEORGE PRINCE won the 1st prize in a class for six Tea Roses (one variety), with exquisitely-shaped flowers of Mrs. E. Mawley, which variety was also shown by Mr. HARRY DREW, Longworth, Faringdon, Berks., and Mr. W. T. MATTOCK, Oxford, who were awarded the 2nd and 3rd prizes respectively.

Messrs. PERKINS & SONS beat six contestants in a class for 12 H.P.s, dissimilar. They had lovely flowers of Gustave Piganeau, Frau Karl Druschki, A. K. Williams, Horace Vernet, Hugh Dickson, Duke of Edinburgh, and Marie Corelli. 2nd, THE KING'S ACRE NURSERY CO., whose best flowers were Frau Karl Druschki, E. Y. Teas, Mrs. John Laing, and A. K. Williams. 3rd, Mr. GEORGE PRINCE.

HARDY HERBACEOUS AND MISCELLANEOUS FLOWERS (OPEN).

A class that created a good deal of interest was that for a collection of 25 kinds of herbaceous flowers arranged on a space of 8 feet by 4 feet. The 1st prize consisted of a Challenge Cup, value 25 guineas, presented by F. A. Chandler, Esq., Leamington. There were five entries, but owing to a misinterpretation in the reading of the schedule three exhibits had to be disqualified. This was unfortunate, because the disqualified exhibits were much superior to that of FRANK BOUSKELL, Esq., Market Bosworth, Leicestershire (gr. Mr. G. Hollis), who was awarded the Cup. 2nd, Mr. J. H. MARSDEN, Malvern Link.

Of the seven exhibits in a class for 12 bunches

of hardy herbaceous flowers (distinct kinds), Mr. C. H. HERBERT, Hazelwood Road, Acocks Green, was the best. Included in this exhibit were hand-some bunches of Gaillardias, Lychnis chalcedonica, Cimicifuga racemosa, Alströmria aurantiaca, and Galega Niobe; 2nd, FRANK BOUSKELL, Esq. (gr. Mr. G. Hollis).

Mr. W. HARPER, Leamington, won the 1st prizes in classes for (1) a bouquet, composed of sprays of Oncidiums, Odontoglossums, &c., over a groundwork of Cattleyas (2) a bridal bouquet, consisting principally of Orchids and Lilies of the Valley (3) three sprays and (4) three button-hole bouquets.

In a class for 12 Carnations dissimilar, Mr. C. H. HERBERT Acocks Green, took the lead with large, refined flowers of Sam Weller, Robin Hood, R. A. Rowberry, Eldorado, King Solomon, and Linkman; 2nd, Mr. A. R. BROWN, King's Norton. In another class for 12 Self Carnations the same two exhibitors were placed as before. Daffodil, Cardinal, W. H. Parton, and Firefly were the best varieties in the 1st prize stand.

Three classes were provided for Dahlias, viz.: (1) 12 cactus varieties (2) 12 show varieties, and (3) 12 single varieties. In each of these classes HUGH MITCHELL, Esq., Mercote Hall, Hampton-in-Arden (gr. Mr. T. Batchelor), won the 1st prizes.

SWEET PEAS.

In the Society's class for six varieties of Sweet Peas there were 11 excellent exhibits. The 1st prize was won by Mr. T. JONES, Bryn Penylan, Ruabon, whose flowers were unusually large, strong, and handsome. The varieties exhibited were Etta Dyke, Asta Ohn, Nancy Perkin, Miriam Beaver, Sunproof Crimson and Elsie Herbert; 2nd, J. W. LAMPLUGH, Esq., Manor House, Leamington (gr. Mr. S. Vincent).

Mr. H. Eckford's prizes were offered for nine distinct varieties. J. W. LAMPLUGH, Esq., won the 1st prize with exquisite flowers of Frank Dolby, Elsie Herbert, Princess of Wales, Henry Eckford, John Ingman, Black Knight, and Nora Unwin; 2nd, Mr. RANDALL, Leamington.

In Messrs. Baker's class for six varieties, the 1st prize was won by Mr. ROBERT SUMMERS, Coventry, who showed beautiful flowers of Clara Curtis, Anna Lumley, and Etta Dyke; 2nd, Mr. W. ELLIS MASTERS, Warwick.

Messrs. Webb's prizes were offered for eight bunches, and here the redoubtable Mr. T. JONES, of Ruabon, won the 1st prize with remarkably large, substantial flowers borne on very strong stems. The varieties exhibited were John Ingman, Etta Dyke, Mrs. H. Sykes, Asta Ohn, Tennant Spencer, Helen Lewis, Mrs. Routzahn, and Othello Spencer; 2nd, Mrs. CHAPPELL, Wellesbourne Hall, Warwick (gr. Mr. T. Parry), with a very fine lot, the variety Elsie Herbert being particularly good.

There were ten competitors in Mr. Robert Sydenham's class for nine distinct varieties. Mr. T. JONES was again placed 1st, with wonderfully large flowers of Clara Curtis, Helen Lewis, Constance Oliver, Sunproof Crimson, and Evelyn Hemus; 2nd, SIR THOMAS HESKETH, Bart., Easton Neston, Towcester (gr. Mr. G. F. Hallett), whose best flowers were George Herbert, Clara Curtis, Etta Dyke, and Constance Oliver.

FRUIT (OPEN).

Eighteen classes were provided for fruit. The leading class was for 8 distinct dishes (Pineapple excluded). Black and white Grapes were allowed. The schedule required each collection to be decorated with plants or cut flowers, for which separate awards were made. In addition to the Society's 1st prize of £6, R. E. L. Naylor, Esq., Leamington, presented a Challenge Cup, value 25 guineas, to become the property of the exhibitor who wins it three times in succession or four times in all. The Duke of PORTLAND, Welbeck Abbey, Notts (gr. Mr. J. Gibson), and the Earl of HARRINGTON, Elton Castle, Derby (gr. Mr. J. Goodacre, V.M.H.), were the only competitors, and the 1st and 2nd prizes for both fruit and decorations were awarded in the order named. The 1st prize collection of fruit consisted of well-finished Muscat of Alexandria and Black Hambro' Grapes, large, well-coloured Marguerite Marillat Pears, Pineapple Nectarine (extra good), Crimson Galande Peach, Negro Largo Fig, James Grieve Apple, and an unnamed seedling Melon. The decorations consisted of pink Malmaison Carnations, Eulalia leaves, and sprays of Selaginella. The 2nd prize collection

included very good dishes of *Préece de Croucels* Nectarine and *Triomphe de Vienne* Pears. The decorations were poor.

The Earl of HARRINGTON had the best of three exhibits in a class for four dishes of fruit. He showed Countess Melon, Thomas Rivers' Peaches, Kirke's Plum, and a shapely bunch of Muscat of Alexandria Grapes. 2nd, the Duke of PORTLAND, whose exhibit included splendid dishes of *Crimson Galande* Peaches and *Spencer Nectarines*. The last-named exhibitor won 1st prizes in classes provided for (1) one dish of Nectarines with handsome fruits of Pineapple (2) one dish of Plums, with the Jefferson variety in splendid condition (3) one dish of Dessert Apples, with very handsome fruits of James Grieve (4) three dishes of Dessert Apples, distinct varieties, and (5) one dish of Cherries.

LORD WILLOUGHBY DE BROKE, Compton Verney, Kineton (gr. Mr. John Lloyd), had the best pair of Black Grapes, showing large, well-berried bunches of Black Hambro'. The same exhibitor also showed the winning dish of Red Currants. The best dish of Black Currants came from Captain STARKEY, Bericote House, Leamington (gr. Mr. G. L. Blackburn), and the winning dish of White Currants was sent by Mrs. CHAPPELL (gr. Mr. T. Parry).

The best two bunches of White Grapes were Muscat of Alexandria, shown by F. J. MYERS, Esq., Charlton Lodge, Banbury (gr. Mr. Jas. M. Bush), who also had the best-flavoured Melon, in the variety Eastnor Castle.

H. E. WISE, Esq., Shrubland Hall, Leamington (gr. Mr. W. Casley), won the 1st prize in a class for Apricots. Mr. THOS. MARSH was the only competitor in a class for six dishes of kitchen Apples.

VEGETABLES.

In a class for a collection of 10 kinds of vegetables there were five entries. The 1st prize was won by the Hon. VICARY GIBBS, Aldenham House, Elstree (gr. Mr. E. Beckett), whose produce showed remarkably high culture. The same exhibitor also showed the best brace of Cucumbers, as well as the winning dish of dwarf Beans and the best three Cauliflowers. Mr. JOHN HUDSON, Leicester, was awarded the 1st prize for (1) 12 Onions and (2) 12 Tomatos.

Prizes were offered by Messrs. Sutton & Sons for nine distinct kinds. There were four exhibits, and the 1st prize was won by Mr. JOHN HUDSON, Leicester, who showed excellent Ailsa Craig Onions, Centenary Peas, Pink Perfection Celery, Magnum Bonum Cauliflowers, and A1 Tomatos, all nicely arranged; 2nd, Mr. E. DEAKIN, Hay Mills, Birmingham, whose best examples were Magnum Bonum Cauliflower and New Red Intermediate Carrot.

Messrs. Dickson & Robinson's prizes were for six distinct kinds. 1st F. E. MUNTZ, Esq., Umberslade, Hockley Heath (gr. Mr. S. Foster), for a nice lot, in which Snowdon Cauliflower, Premier Onion, and Perfection Intermediate Carrot were meritorious; 2nd Lord WILLOUGHBY DE BROKE.

Of the five competitors in Messrs. Webb's class for six distinct kinds, the Hon. VICARY GIBBS won the 1st prize. He showed splendid Cauliflowers, Onions, Potatos, Tomatos, Peas, and Carrots. 2nd, Mr. J. HUDSON, Leicester.

AMATEURS AND GENTLEMEN'S GARDENERS RESIDENT IN THE COUNTY OF WARWICK.

Three entries were made in a class for a group of Plants arranged for effect on a space of 12 feet by 9 feet. The 1st prize was well won by J. H. BURLEY, Esq., Brandon Parade, Leamington (gr. Mr. J. H. Finch), who had a well-balanced group, in which bright foliaged and flowering plants were artistically arranged; 2nd, the Misses ROBINSON, The Newlands, Leamington (gr. Mr. A. T. Friend).

FRANK DENNISON, Esq., Cranford, Leamington (gr. Mr. H. Sykes) won the 1st prize in classes for (1) 12 Roses, dissimilar, (2) six Tea Roses, dissimilar (3) six Roses, any variety. Included in the above three classes we noted particularly good blooms of J. B. Clarke, Bessie Brown, Gustave Piganeau, Dean Hole, Comtesse de Nadaillac, Bridesmaid, and Mrs. E. Mawley.

The Misses ROBINSON (gr. Mr. A. T. Friend) showed the best half-dozen bunches of hardy border flowers, dissimilar; 2nd, Mrs. MANN, Harbury, Leamington.

Mr. W. ELLIS MASTERS scored in classes provided for (1) Zinnias and Cactus Dahlias. The best Carnations came from Mrs. RAYSON, and

G. T. PARSONS, Esq., Warwick, took the lead with African Marigolds.

The principal fruit class was for four distinct dishes. The Society offered 90s. in three prizes, and a Challenge Cup, value 15 guineas, was added to the 1st prize of £2. There were four good exhibits. 1st, Rev. F. HODGSON, Clopton House, Stratford-on-Avon (gr. Mr. W. Nicholls), who showed splendid dishes of Rivers Orange Nectarine, Bellegarde Peach, Superlative Melon, and Muscat of Alexandria Grapes; 2nd, the Marquis of HERTFORD, Ragley Hall, Alcester (gr. Mr. C. Harding).

LORD WILLOUGHBY DE BROKE led in the next class for two bunches of Black Grapes. The variety exhibited was Madresfield Court.

C. T. GARLAND, Esq., Moreton House, Moreton Morrell (gr. Mr. W. Keam), had the best two bunches of White Grapes, showing Muscat of Alexandria in excellent condition.

DINNER-TABLE DECORATIONS.

One large tent was required to accommodate the exhibits in the classes provided for dinner-tables decorated with flowers. Each table measured 8 feet by 4 feet. A popular class was that reserved for ladies, there being 15 entries. The 1st prize was well won by Mrs. MANN, Harbury, Leamington, who used pink Carnations, Gypsophila, and delicate green and variegated foliage; 2nd, Mrs. BEILRY, Leamington.

Mr. Robert Sydenham's class was for Sweet Peas set up in rustic stands. The 1st prize was secured by Miss ADA TOWNSEND, Lower Broadbeath, Worcester, who displayed some very pretty pink Sweet Peas, relieved with Selaginella and *Codiaeum* leaves; 2nd, Miss F. JENKS, Codrall.

Mr. W. HARPER, Leamington, beat 10 competitors in the Society's open class with a beautifully-arranged table, consisting mostly of sprays of small flowered Orchids and Selaginellas; 2nd, Mr. W. T. MATTOCK, Oxford, whose principal flowers were Rose Irish Elegance and a pretty single pale-pink variety; 3rd, Miss ADA TOWNSEND, Worcester.

HONORARY EXHIBITS.

Messrs. T. S. WARE, LTD., Feltham, showed a large collection of cut flowers of double and single Begonias in good condition.

Mr. H. N. ELLISON, West Bromwich, had a well-arranged group of Ferns in great variety.

From Messrs. W. H. SIMPSON & SON, Birmingham, came a representative collection of Sweet Peas.

Mr. HENRY ECKFORD, Wem, Salop, also had a large exhibit of Sweet Peas.

Messrs. W. ARTINDALE & SON, Sheffield, sent a wonderfully good collection of Violas arranged in masses over a groundwork of black cloth. A selection of Roses and herbaceous flowers were also shown. Seven bold arches decorated with Dorothy Perkins Rose, *Francois*, *Gladioli*, &c., gave a pretty finish to an attractive exhibit.

Messrs. GUNN & SONS, Olton, Birmingham, showed Roses, Violas, and Gaillardias.

Mr. VINCENT SLADE, Taunton, brought a good collection of cut flowers of single and double Zonal Pelargoniums.

Mr. AMOS PERRY, Winchmore Hill, London, exhibited *Spiræas*, Japanese Irises, and Water Lilies.

ROBERT SYDENHAM, LTD., Birmingham, had Sweet Peas in rustic stands.

Messrs. HEWITT & CO., Solihull, showed a bright collection of hardy flowers.

Mr. G. LANGE, Hampton, had a beautiful group of long-stemmed Carnations arranged in large vases. The varieties Winsor, Mrs. H. Burnett, Britannia, Beacon, and Fair Maid were shown in splendid condition.

Messrs. BAKERS had an assortment of border flowers and Alpine plants, and some very good *Nymphæa* flowers.

From Mr. FRANK LILLEY, Guernsey, came early flowering *Gladioli*, and *Montbretias* arranged in bold masses.

Messrs. DICKSONS, Chester, contributed a large collection of hardy flowers, in which Roses, Lilliums, Irises, and Iceland Poppies were conspicuous.

Messrs. JOHN PEED & SONS, West Norwood, had an effective group of *Caladiums*.

Messrs. WEBB & SONS, Stourbridge, had a large exhibit of Sweet Peas, fruits and vegetables, arranged on a circular stand near the end of the

large plant tent. The Challenge Cup offered for the best non-competitive exhibit was awarded to Messrs. WEBB & SONS.

Miss ADA BRANSTONE, Leamington, sent a pretty collection of floral devices.

ALFRED HOLT, Esq., J.P., Leamington (gr. Mr. C. Finch), contributed a small group of miscellaneous foliage and flowering plants.

From Mr. W. L. PATTISON, Shrewsbury, came nearly 100 varieties of Violas, made up into sprays.

Messrs. JARMAN & CO., Chard, Somerset, had a pleasing stand of *Centaureas* and Sweet Peas.

Mr. W. HARPER, Leamington, sent Carnations, *Spiræas*, and floral devices.

Messrs. YOUNG & CO., Cheltenham, showed a grand lot of Carnations.

Mr. L. R. RUSSELL, Richmond, Surrey, sent a handsome group of foliage and flowering plants.

Messrs. WHITE & CO., Worcester, staged border flowers and Water Lilies.

Messrs. HINTON BROS., Warwick, showed Sweet Peas, Roses, and floral devices.

Messrs. CLIBBON & SONS, Altrincham, exhibited a large collection of vegetables.

Messrs. JOHN WATERER & SONS, Bagshot, Surrey, had a few well coloured *Cenicientas* and *Hollies*, and a fine batch of *Spiræa* Anthony Waterer.

ROSE SHOW AT LIEGNITZ.

THE German Amateur Society of Rosarians held their annual exhibition of Roses in this old Silesian town. It drew a large number of visitors from far and near, for it was the largest show that has been held in that part of Germany for the last 30 years. It will suffice for our readers if we notice the new varieties and a few others exhibited on this occasion.

Mr. PETER LAMBERT, of Treves, showed a large assortment of cut blooms of all classes, besides Tea hybrids, *Rugosa* hybrids, and wild Roses. Mr. H. W. CORDES was another exhibitor of fine blooms. It was said that the best had been cultivated under glass, but it was probably the goodness of the soil of the *Marsch* which had contributed to the excellent quality of his exhibits of Jacob's Perle, Lyon Rose, Komigui Emma, Mildred Grant, Dean Hole, Papa Lambert, Laurent Carle, Mme. Segond Weber, &c.

The principal exhibitors of new Roses were Messrs. J. C. SCHMIDT, Erfurt, and KIESE & CO., Vieselbach, in Thuringia. This last-named firm are the raisers of the variety Otto von Bismarck that is recommended as an improved La France. The firm of KIESE & CO. are the raisers of the new Bengal Rose *Leuchtiener*, which, in colour, resembles *Gruss an Teplitz*, but is an improvement on that variety, except in one point, namely, the new Rose is weaker in the stem. Mr. KIESE employs the variety Frau Karl Druschki in his crosses. One of his crosses with this variety gave *Gross Herzogin von Weimar*, which combines the good features of Frau Karl Druschki and K. A. Victoria. The colour is a light yellow. Excellent is likewise the novelty *Deutschland*, a creamy Rose, with bronze, and well filled, *Stadtrat Glaser* is another fine novelty, obtained from a cross between Frau Karl Druschki and K. A. Victoria. Further deserving of mention is a seedling from *Etoile de France*, likewise a new climbing variety, *Wartburg*, of a light red colour and well filled; and *Eisenach*, a grand flower, a perpetual bloomer, with glistening foliage.

Mr. J. C. SCHMIDT showed an interesting seedling from a cross of *Caroline Testout* with Frau Karl Druschki, and the climber *Veilchenblau*, which has the otherwise not admired violet colouring.

Herr VICTOR TESCHENDORFF, Cossebaude, showed, among other varieties, a strong red sport from *Levassasseur*, named *Erna Teschendorff*. H. CHRISTIAN WEIGAND, Soden, showed a new *Wichuraiana* hybrid named *Sodenia*, to be put into commerce next year. It is a well-filled flower of fiery-red colour.

T. BÖHM, Obercassel, showed *Graf Zeppelin*, a sport from *Crimson Rambler*, and which was shown last year. H. CARL SCHMIDT, Kestritz, showed a cross between *Johanna Sebus* and *R. lutea*, with a similarity to *Dora Hansen*.

H. N. WEITZ, Treves, showed a fine bloom of *Herzogin Marie Antoinette*, the raisers being given as *Welter* and *Jacobs*. The intense yellow flowered hybrid is a fine addition to the class, which is weak in yellow colours.

SALTAIRE ROSE.

JULY 19.—The eighth annual exhibition of the Saltaire Rose Society was held on the above date. The weather was dull, and at times threatening, but no rain fell, and the attendance was exceedingly satisfactory, the receipts being only £2 short of last year, when a record was established.

In previous years the local show has been held in conjunction with provincial exhibitions of the National Rose Society and the National Sweet Pea Society, but on neither of these occasions did the general interest and attractiveness of the exhibition reach the high standard attained this year.

The society's gold medal and the 50-guinea challenge rose bowl (given by Mr. G. C. Waud) for cut Roses were again won by Messrs. ALEX. DICKSON & SONS, Newtownards, Ireland. This was the fourth time in succession that they have won the trophy, and it thus becomes their absolute property. 2nd, Mr. HUGH DICKSON, Belfast; 3rd, Messrs. D. PRIOR & SONS, Colchester. For 16 distinct varieties, three trusses of each, 1st, Mr. HUGH DICKSON; 2nd, Messrs. ALEX. DICKSON & SONS; 3rd, Messrs. D. PRIOR & SONS.

In the Sweet Pea classes the silver bowl presented by the Lord Mayor of Bradford (Alderman W. Land) was won by Sir R. L. BAKER, Bart., M.P., Blandford. In the amateurs' classes (open) the society's silver bowl and medal went to Mr. J. CONWAY JONES, Hucclecote, Gloucester.

In the classes for amateurs residing within a radius of 20 miles from Saltaire, the National Rose Society's bronze medal was awarded to Mr. DUNCAN G. LAW, of Hawksworth Hall (gr. Mr. J. Johnston), for a fine bloom of William Sheen, a light pink variety with a delicious silvery tint. In the classes for Sweet Peas grown within a similar area, Mr. S. SHACKLETON, of Cross Hills, gained the special silver cup offered.

In the local classes great interest was taken in the competition for the silver rose bowl given by the president, Mr. Percy H. Illingworth, M.P. This trophy, which accompanied the 1st prize in the class for cut Roses, 12 blooms of H.T.s, of not fewer than nine varieties, was won by Mr. DUNCAN G. LAW, of Hawksworth Hall. The silver bowl presented by Mr. W. A. Whitehead went to Mr. A. HOFFMAN, of Baildon (gr. Mr. T. Nixon), for a collection of 24 blooms, but the National Society's Medal for the premier bloom was given for Avoca, which was included in the 3rd prize exhibit shown by Mr. J. M. TANKARD, of Baildon (gr. Mr. R. Wilde). Another medal, given to the premier bloom in classes open only to growers of fewer than 500 trees, was awarded to a Lyon Rose, among the 12 blooms shown by Mr. JOHN AMBLER, of Baildon (gr. Mr. R. Backhouse). Another bronze medal, offered for the premier bloom in the classes for smaller numbers of specimens, went to William Sheen, shown by Mr. S. WOODHALL, of Shipley, a similar medal falling to Mrs. ALFRED BROOKSBANK, of Saltaire, for an excellent specimen of Caroline Testout.

The 1st prize in the open classes for floral displays of Roses, arranged for effective display, went to Messrs. W. & J. BROWN, of Peterborough. Mr. ARTHUR H. RIGG, who secured the 2nd prize, showed a collection hardly inferior so far as the individual flowers were concerned, but the arrangement was not quite so effective. G. C. WAUD, Esq., Baildon (gr. Mr. W. Taylor), secured the 1st prize, a silver bowl and silver medal, for 24 blooms shown in the local classes.

NON-COMPETITIVE EXHIBITS included a collection of Sweet Peas shown by Mr. R. BOLTON, Warton, Carnforth (gold medal). Messrs. MAWSON BROS., of Windermere, staged a collection of herbaceous flowers (silver-gilt medal); Messrs. E. J. BATCHELOR & SONS, of Harrogate, gained a gold medal for Ferns; Messrs. JAMES BACKHOUSE & SON, LTD., of York, received a Bronze Medal for a collection of herbaceous flowers; Mr. JOHN BROOKE, of Bradford, displayed decorative plants, crosses, and wreaths (gold medal); G. C. WAUD, Esq., Baildon (gr. Mr. W. Taylor), showed foliage plants (gold medal); Messrs. R. SYDENHAM, LTD., showed Sweet Peas; and Messrs. W. CONWAY & SONS, Halifax, showed hardy flowers (silver medal).

SOUTHAMPTON CARNATION.

JULY 27.—The 12th annual show was held on the pier, and, although not so large as in some previous seasons, it was a very good display.

DRESSED FLOWERS.

Three competitors entered in the class for 12 flakes and Bizarres, distinct, Mr. J. DOUGLAS, Edenside, Great Bookham, Surrey, showing best. He staged the following varieties: Gordon Lewis, Recorder, Rowena, Torchlight, Master Fred, Peter Pan, George Melville, Sarah Payne, Sportsman, T. H. Hextall, and Arthur. 2nd, Mr. A. R. BROWN, King's Norton, Birmingham.

For six varieties, distinct, C. A. LINZEE, Esq., Bramdean Lodge, Alresford (gr. Mr. R. Ransom), was the only exhibitor, showing good blooms of Sportsman, Master Fred, Mr. T. Lord, and George Melville.

In the class for 12 varieties, distinct, other than flakes or Bizarres, Mr. DOUGLAS had the best of four exhibits, staging Sam Weller, Daffodil, Linkman, Hercules, Hidalgo, King Solomon, Lord Steyne, Queen Eleanor and Dido. 2nd, Mr. HAYWARD MATHIAS, Medstead, Hants.

Mr. LINZEE again won the 1st prize in the smaller class for six varieties, there being four entrants.

In the class for 12 Picotees, distinct, there were four exhibits. Mr. HAYWARD MATHIAS led with choice blooms of Gloria, Constance, Libra, Togo, Lady Gascoigne, Exquisite and Her Majesty. 2nd, Mr. J. DOUGLAS.

For six varieties of Picotees, Mr. J. J. KEEN, 37, Avenue Road, Southampton, won the 1st prize. Golden Pippin, John Ruskin, Libra, Her Majesty and Exquisite were his best examples. 2nd, Mr. LINZEE.

The premier flower of a Bizarre or flake was R. Houllgrave, shown by Mr. LINZEE.

Mr. H. MATHIAS showed the best self-coloured Carnation in Irma, and the best Fancy in Hecla.

The best yellow-ground Picotee was Onward, shown by Mr. J. DOUGLAS.

UNDRESSED BLOOMS AND BORDER VARIETIES.

For a display of Carnations and Picotees arranged by their own foliage in a space 5 feet by 2½ feet, three growers competed. Mr. H. LAKEMAN, Thornton Heath, Surrey, won the 1st prize with a good display of such varieties as Solomon Gill, Santa Claus, Liberté, Togo, Daffodil and Pathfinder. 2nd, Mr. E. C. GOBLE, Nurseryman, Rvde.

In a smaller class, Mr. J. FAIRLIE, Springfield Park, Acton, was placed 1st, and Mr. J. H. LINNINGTON, Southlands, Newport, I.O.W., 2nd.

Mr. LINZEE had the winning exhibit in the class for 20 blooms of Carnations or Picotees arranged for effect in a vase, Mr. J. FAIRLIE being placed 2nd.

Mr. DOUGLAS showed the best white variety in Mrs. T. E. Henwood, the best scarlet kind in Cardinal, the best yellow Self in Daffodil, the best buff in Mrs. Griffith Jones, and the best dark Self in Agnes Sorrel.

Mr. A. R. BROWN had the best rose or salmon self in Mrs. Pope, whilst Mr. H. MATHIAS showed the best pink-flowered sort.

Mr. DOUGLAS excelled in the class for six blooms of fancy-ground Picotees with Liberté, whilst Mr. H. MATHIAS showed best in the similar class for yellow-ground Picotees.

Mr. LINZEE won many of the premier awards in the smaller classes in similar sections.

Mr. J. H. LINNINGTON, Southlands, Newport, I.O.W., won the silver cup offered by Mr. H. Lakeman, Queensbury Nurseries, Thornton Heath, Surrey, for 12 undressed blooms of Carnations and Picotees.

Sir RANDOLPH BAKER, M.P., Ranston, Blandford (gr. Mr. Usher), won the 1st prize in the class for three blooms each of three American varieties staged in vases.

There were seven exhibitors in the class for a dinner table arranged with Carnations or Picotees. Mrs. ERNEST LADHAMS, Wordsworth Road, Shirley, Southampton, won the 1st prize.

SWEET PEAS.

In the Sweet Pea classes there were three competitors. For Messrs. R. Sydenham & Co.'s prize for 12 varieties, Mr. F. GREEN, The Polygon, Southampton, was placed 1st, his varieties including Countess Spencer, Clara Curtis, Dorothy Eckford, Frank Dolby, and King Edward VII.

Five competed for Messrs. Toogood's prizes for nine bunches, distinct, and Mr. USHER won the premier place with a delightful display, including Etta Dyke, Elsie Herbert, Mrs. A. Ireland, John Ingman, Audrey Crier, and Mrs. Routzahn.

Mr. C. WADEY, Broadstone, Dorset, won the 1st prize in Mr. H. Eckford's class for nine varieties.

BISHOP'S WALTHAM HORTICULTURAL.

JULY 27.—The 36th annual show was held in the Palace Ruins, Bishop's Waltham, on this date, and was much the best of the series. This society was started for the benefit of cottagers, but it has grown into a position of wider importance. The committee, with Mr. E. Molyneux as their leader, arranged all the details satisfactorily.

In an open class for decorated dinner tables, 6 feet by 3 feet, Orchids being excluded from the arrangement, prizes of £5, £3 and £2 were offered. Seventeen exhibitors entered, and, after a close competition, Miss G. SAUNDERS, Fareham, was awarded the 1st prize for a delightful arrangement of Carnation Fair Maid and Lily of the Valley, with suitable greenery arranged in a low glass bowl with globular glass vases around. Mr. E. C. PERN, Droxford, Hants, was a close 2nd. 3rd, Mrs. COLSTON HALE, Virginia Lodge, Warminster. An extra prize was awarded to Mr. F. G. BEALING, Bassett, Southampton, for a table decorated with Lyon Rose.

For a table arranged with wild flowers, Miss ELSIE COLLINS, Swanmore Park Lodge, was easily 1st; she employed Scarlet Poppies and Camomile; 2nd, Mrs. W. PARVIN, Dursley. In the class, confined to members of the society only, for a decorated table, Miss D. GUNNER, Ridge mede, Bishop's Waltham, was awarded the 1st prize for an effective arrangement of Nemisia.

Eleven competed in the class for a basket of flowers, the best exhibit being a pretty combination of Sweet Sultan and other subjects arranged by Mrs. COLSTON HALE.

Mr. COLSTON HALE was 1st for the best arranged vase of Sweet Peas in competition with 18 other exhibitors, Mr. F. G. BEALING being placed 2nd.

For a bowl of Roses Mrs. ARTHUR BIDE, Alma Nurseries, Farnham, won the 1st prize easily with a charming mass of Lyon Rose; 2nd, Miss V. CRABBE, Aldershot, with General MacArthur.

Roses were shown in large numbers. For six bunches, distinct, W. H. MYERS, Esq., Swanmore Park, Bishop's Waltham (gr. Mr. G. Ellwood), was easily 1st, as he also was for six bunches. Miss GLADSTONE, Hampton Hill, Swanmore (gr. Mr. W. Cooper), was awarded 2nd prize in the class for six bunches, and this exhibitor won the premier position for six bunches of Carnations.

Mr. B. PEPPLER, Vernon Hill, Bishop's Waltham, was placed 1st for six bunches of annuals; whilst for 18 bunches of flowers grown out-of-doors, Mrs. C. MACRAE, Meonstoke House, Bishop's Waltham (gr. Mr. H. Child), won the 1st prize with a representative exhibit of seasonable subjects. Mr. ELLWOOD won Messrs. Ladhams's prize offered for 12 bunches of hardy flowers in a close competition.

Mr. E. J. J. EDWARDS, Portland Place, Bishop's Waltham, won the 1st prize for 12 bunches of Sweet Peas, distinct varieties. Mr. COOPER won Mr. Eckford's 1st prize for 12 bunches, and he also excelled in Messrs. J. Carter & Co.'s and Messrs. R. Sydenham & Co.'s classes. Miss BASHFORD, Soberton Towers, won the 1st prize in Mr. C. Breadmore's class for six varieties.

FRUIT.—W. H. MYERS, Esq., was 1st for six dishes, distinct, with Muscat of Alexandria and Madresfield Court Grapes, Melon, Peaches and Nectarines as his best dishes. H. W. TRINDER, Esq., Northbrook House, Bishop's Waltham (gr. Mr. Tursey), was 1st for four varieties. For four varieties of fruit grown in the open, T. C. WILSON, Esq., The Thickets, Bishop's Waltham (gr. Mr. Barnes), won easily.

Displays of vegetables were numerous and good. W. H. MYERS, Esq., won Messrs. Toogood's prize for eight dishes, and he also excelled in Messrs. Sutton & Son's and Messrs. E. Webb & Son's classes. Mr. COOPER won Messrs. J. Carter & Co.'s prize offered for six dishes.

PERTSHIRE SWEET PEA.

JULY 30.—This society, the first of its kind in Scotland, was formed last autumn, and immediately met with a most encouraging amount of support. The first show was held on the above date, a large tent being completely filled with excellent exhibits. In several classes competition was very keen.

In the class for a group open to trade growers only, Messrs. YOUNG & SON, Elgin, won the gold medal; 2nd, Messrs. THYNE & SON, Dundee. This was the only class in which we could not agree with the judges' decision, as Messrs. THYNE'S flowers were much superior, though the arrangement was not so effective.

The principal class in Section II., from which traders were excluded, brought some magnificent exhibits. Mr. THOMAS FENDER, Cultoquhey, Crieff, was placed 1st, thus winning the challenge cup offered. He showed magnificent bunches of John Ingman, Elsie Herbert, Helen Lewis, Constance Oliver, Mrs. Routzahn, Olive Ruffle, The King, Masterpiece, Prince of Asturias, Etta Dyke, Mrs. H. Sykes, and Evelyn Hemus. 2nd, Mr. GEORGE REID, Dundee; 3rd, Mr. Wm. YOUNG, Falkland Palace.

There was many non-competitive displays, the exhibitors including Mr. H. ECKFORD, Wem; Messrs. BAKERS, Wolverhampton; Messrs. ALEXANDER & BROWN, Perth; and Messrs. DOBBIE & CO., Edinburgh, who had a very fine collection, and were awarded a Gold Medal.

The president of the society is the Earl of Moray, the chairman, the Rev. J. S. Clark, Bridge of Earn, and the secretary, who did much to make the show a success, Mr. R. S. Halley.

BASINGSTOKE HORTICULTURAL.

AUGUST 1.—Held in Poldings Park on this date, the annual show may be described as successful, although in the open classes there was a falling off in the number of entries, especially in the plant section. Cut flowers of high quality were contributed in satisfactory numbers.

In the section devoted to floral decorations confined to lady exhibitors there was a good and interesting display.

PLANTS.—For a group of miscellaneous plants, arranged for effect in a space of 10 feet by 7 feet, two competed, the 1st prize being awarded to W. H. McCONNEL, Esq., Baughurst, Basingstoke (gr. Mr. G. Wassell). At the back of the group there was a well-grown plant of Kentia Forsteriana, whilst here and there were placed well-grown, single-stemmed Codiaums and Acalyphas, amongst a groundwork of Ferns. The flowering plants were tall specimens of Campanula pyramidalis alba, Pancratium fragrans, Gloxinias, and several plants of an exceptionally fine form of a dwarf, pure white Phlox Drummondii. The whole was effectively edged with Abutilon megapotamicum, Campanula isophylla and a deep-bronze-coloured Lycopodium. 2nd, S. E. BATES, Esq., Marrydown Park, Basingstoke (gr. Mr. W. Green), with good material too formally arranged.

Tuberous Begonias were well represented. For eight varieties there were four entries, J. G. HOLZ, Esq., Kingsclere (gr. Mr. F. H. Sweet), winning the 1st prize with splendidly-grown and well-flowered specimens of both single and double varieties. 2nd, the Rev. A. H. GAY, Worting, Basingstoke (gr. Mr. W. E. Perris).

Specimen plants in flower were not numerous. Dr. MAPLES, Kingsclere, had the best exhibit, a particularly well-flowered Lilium lancifolium album being conspicuous in his group.

Pyramidal-trained Coleus are a feature at this show. For four specimens, S. E. BATES, Esq., was placed 1st, with richly-coloured examples, from 5 feet to 6 feet high. W. H. McCONNEL, Esq., was awarded the 1st prize for four foliage plants, showing excellent Kentia Belmoreana, Dracaena Lord Wolseley (richly coloured), and Maranta zebrina.

For a collection of hardy flowers, arranged on a space of 6 feet run of tabling, quality and effective arrangement to be considered, there were three entrants. L. SIMONDS, Esq., was easily 1st for a good display of Roses, Carnations, Spiraeas, Phloxes, Delphiniums, and other kinds.

Exhibits of Sweet Peas were numerous and good. For 12 bunches, distinct, the Hon. Mrs. F. BARING, Candover House, Alresford (gr. Mr.

A. Childs), was placed 1st, and L. SIMONDS, Esq., 2nd among six entrants.

Dahlias formed an interesting display, the Hon. Mrs. BARING winning in the classes for both show and Cactus-flowered varieties in 12 distinct sorts. J. G. HOLZ, Esq., had the best six Gladioli and also the best three dozen Carnation blooms, arranged with their own foliage.

Miss N. WADMORE, Woodside, Basingstoke, showed the best table decoration, having pink Carnations and Sweet Peas effectively blended with suitable foliage; and for a similar class, in which Orchids were permitted, Mrs. E. LADHAMS, Shirley, Southampton, won easily.

The exhibits of fruit were not noteworthy, but vegetables were numerous and good. Mrs. TREVOR GOFF, Sherfield Hall, Basingstoke (gr. Mr. H. E. Wallis), won the society's leading prize for eight dishes of vegetables, S. E. BATES, Esq., winning Messrs. Sutton's prize for six dishes, in both cases staging desirable produce.

WEST DERBY HORTICULTURAL.

AUGUST 1.—This annual exhibition was held on August Bank Holiday, in a field adjoining the Rectory, the residence of the president, the Rev. Percy Stewart. The entries were as numerous as ever, and a good show resulted. The decorated tables came in for considerable praise, Miss WILSON securing the premier award in one section, with Sweet Peas, and Mrs. V. YOUNG, in the open section, with Carnations.

The 1st prize-winners in the open classes were as follow:—

Twelve bunches half-hardy annuals, H. McCUBBIN, Esq. (gr. Mr. R. Claeton); 12 bunches herbaceous cut flowers, Drs. TISDALL & INGALL (gr. Mr. G. Osborne); 12 Roses, Miss HEAP (gr. Mr. H. Osborne); 12 Dahlias, the Rev. P. STEWART (gr. Mr. J. Edgar); 12 Carnations, Mr. H. OGDEN; 12 vases of Sweet Peas, Drs. TISDALL & INGALL; bouquet, Mr. H. OGDEN; vegetables (nine varieties), Drs. TISDALL & INGALL, with an excellent exhibit; six varieties, Rev. P. STEWART; two dishes of Peas, H. McCUBBIN, Esq., with capital pods; two Cucumbers, A. H. JONES, Esq.; Tomatos, Drs. TISDALL & INGALL, with fine fruits; six dishes of hardy fruits, Miss HEAP, who also won the 1st prize for six dishes, and the same exhibitor staged good black and white Grapes, Peaches, Nectarines, Cherries, and Gooseberries; six table plants, Drs. TISDALL & INGALL, the same exhibitors having the best foliage plant, the best plant in bloom, and the best two pots of Lilliums. Drs. TISDALL & INGALL showed the best-arranged group, rather overdone with Codiaums. The 2nd prize in the group class went to W. G. LAYTON, Esq. The Silver Challenge Vase, offered by the chairman, Mr. C. A. Young, for 12 vases of Sweet Peas, was won by Mr. NICOLL.

PRESCOT HORTICULTURAL.

AUGUST 1.—The annual show of this Society was held in the park of Knowsley, the residence of the Rt. Hon. Earl of Derby, on the above date. The entries were somewhat below the average number.

There was only one exhibit of a group of plants arranged for effect. The exhibitor was DIXON NUTTALL, Esq. (gr. Mr. W. H. Roberts), and he was awarded the 1st prize.

The same exhibitor excelled with two Palms or Cycads, having Lantanas; 2nd, J. STONE, Esq. (gr. Mr. D. McKelvie), who showed best in the class for four stove or greenhouse plants, T. HENSHAW, Esq. (gr. Mr. J. George), being awarded the 2nd prize in this class.

Mr. D. MCKELVIE won the 1st prize for four greenhouse plants in flower, Messrs. W. H. ROBERTS and J. GEORGE being 2nd and 3rd respectively.

Mr. J. GEORGE secured 1st honours for one stove plant in bloom with a well-flowered specimen of Clerodendron Balfourii; 2nd, Mr. D. MCKELVIE, with a small Ixora.

Mr. W. H. ROBERTS led in the class for Ferns with a good Nephrolepis Piersonii, and he also won the 1st prizes for one fine foliage plant with Cycas revoluta and one hanging basket.

Caladiums were best shown by E. S. ECCLES, Esq. (gr. Mr. C. Houghton).

Mr. A. ROSE showed the best six Gloxinias, and also the best four Begonias.

Mr. W. H. ROBERTS led for three Zonal Pelargoniums, and he was also placed 1st for three Fuchsias.

Mr. W. J. BARKER won the 1st prize for 18 Roses; whilst Mr. J. GEORGE had the best hardy herbaceous flowers and Carnations.

FRUIT.

In the class for four dishes, distinct, J. BEECHAM, Esq. (gr. Mr. W. Oldham), took the premier position with good Black Hamburg Grapes, Melon, Royal George Peaches, and Downton Nectarines, Mr. D. MCKELVIE and Mr. T. EATON followed in the order of their names.

Mr. D. MCKELVIE showed the best Black Hamburg Grapes, and he excelled in the class for two bunches of any other black Grape with Madresfield Court.

Muscat of Alexandria were best shown by E. STAPLETON BRETHERTON, Esq. (gr. Mr. T. M. Nelson); whilst Mr. W. OLDHAM had the winning stand of two bunches of any other white Grape with well-finished bunches of Buckland Sweet-water.

Mr. T. EATON showed the best Melon and Nectarines, and Mr. T. M. NELSON the best Peaches.

In the vegetable classes Mr. J. GEORGE secured the leading award for eight varieties, staging good Celery, Cauliflowers, Tomatos, Onions, and other kinds.

DEBATING SOCIETIES.

DEVON AND EXETER GARDENERS'.—The members, on the occasion of their summer outing, journeyed by train from Exeter to Kingsbridge, and by steamer from that town to Salcombe. There is probably no milder climate in the United Kingdom than that of Salcombe, and of this there was ample proof in the vegetation in and around this South Devon village. The first place visited was Woodcott, the residence of Mr. A. McIlwraith, overlooking the estuary. Growing luxuriantly were Fuchsia corymbosa, flowering finely, Acacia Baileyana, Olearia argophylla, Hydrangeas, many large and vigorous Pittosporums, Eupatorium Weinmannianum, and Brachyglottis repanda. Against the terraced wall, the top of which was sheltered by glass coping, were Citrons bearing heavy crops of exceptionally large fruits. Oranges were noticed in flower and fruit. A three-mile walk brought the excursionists to Sharpitor, the Devonshire seat of Mr. Edric Hopkins. Pomegranates and Bananas were bearing fine fruits; while such plants as Desfontainia spinosa, Feijoa Sellowiana, Myosotidium nobile, Acacia Ricana, Sollya heterophylla and Abelia floribunda were flowering finely. A grand specimen of Griselinia littoralis, 10 feet by 10 feet; another of Drimys Winteri, 10 feet high; several noble trees of golden variety of Cupressus macrocarpa, Phormium tenax variegata, Bamboos and Phyllostachys in great variety were noticed. Amongst the rarer plants blooming freely were Polygala Dalmaisiana, Escallonia organensis, Piptanthus nepalensis, Lonicera Hildebrandtii, Melaleuca hypericifolia, Correa magnifica and Grevillea sulphurea. A fine avenue of Eucalypti was observed, E. globulus being in bloom. Plumbago capensis, Cassia corymbosa, and Diplacus coccinea were in full flower. From Bolt Head, on which Sharpitor is situated, a grand view is obtained, reaching across Torbay and on to Portland Bill. The members returned by steamer from Bolt Head, via Salcombe and Kingsbridge, and thence by train to Exeter. A. H.

HASLEMERE GARDENERS'.—A party of 50 members of this society journeyed to Reading on Thursday, July 28, to visit Messrs. Sutton & Son's nurseries. Reading was reached at noon, the party being met at the station by a representative of the firm. After tea Fawley Gardens were visited.

WARGRAVE AND DISTRICT GARDENERS'.—The summer meeting of this association took the form of an outing on Wednesday, July 27, when a visit was paid to Bear Place, the residence of the president, H. F. Nicholl, Esq., J.P. The company, numbering 25, visited the mansion, the woods, home farm, and gardens and greenhouses. The party broke up about 7.30 p.m., the members having greatly enjoyed their first outing of the kind.

GARDENING APPOINTMENTS.

[Correspondents are requested to write the names of persons and places as legibly as possible. No charge is made for these announcements, but if a small contribution is sent, to be placed in our collecting box for the Gardeners' Orphan Fund, it will be thankfully received, and an acknowledgment made in these columns.]

Mr. W. B. GINGELL, for the past 20 years Superintendent of Ravenscourt Park, Hammersmith, has been appointed to succeed the late Mr. F. SPIVEY, as Superintendent of Dulwich Park, London.

Mr. JAMES R. SMITH, for the past 5 years Gardener at Addington Park, Croydon, and previously 6 years General Foreman at Melton Constable, Norfolk, as Gardener to ISAAC LEWIS, Esq., Bedgebury Park, Goudhurst, Kent.

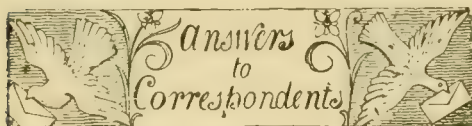
Mr. A. V. DOVE, late Gardener to MUSGRAVE DYNE, Esq., Perryfield, Sollershope, Ross-on-Wye, as Gardener and Bailiff to EDMUND PAGE, Esq., Weatherstones, Hinderton, near Neston, Cheshire. (Thanks for 1s. received for R.G.O.F. Box.—Eds.)

Mr. A. PETCHER, previously General Foreman, also as Gardener to the Right Hon. Lord RUTH, Stansted, Essex, as Gardener to R. C. GOSFORD, Esq., Haslemere, Bishop Stortford, Herts. (Thanks for 2s. sent for R.G.O.F. Box. Eds.)

ENQUIRIES AND REPLIES.

PLANTING AN ORCHARD IN WORCESTERSHIRE.—My employer has a farm in Worcestershire, and wishes to plant an orchard of standard fruit trees, principally Apples and Plums, with a few Pears. The land is under grass and is a heavy, clay soil. Can you furnish me with particulars as to varieties suitable for planting, including one or two varieties of Apples suitable for cider? *T. G.*

—For planting an orchard of 100 standard fruit trees for market purposes in Worcestershire, a good selection would be as follows: Apples, 20 trees of Worcester Pearmain, 20 Bramley's Seedling, and 20 Newton Wonder; Plums, 10 Rivers's Early Prolific, 10 Victoria, and 10 Czar; Pears, 5 Williams' Bon Chretien, 5 Pitmaston Duchess, and 5 Catillac, a stewing variety for which there is always a great demand at remunerative prices. The two best varieties of Apples for cider production are Foxwhelp and Kingston Black. Prepare the holes for planting at 30 feet apart, each station being 5 feet in diameter. Do not mix animal manure with the soil, but if the ground is naturally poor, mix a sprinkling of $\frac{1}{2}$ inch bones with the surface soil and afterwards apply a good mulching of farmyard manure, and repeat this dressing of manure annually to conserve the moisture in the soil as well as to nourish the trees. The best time to plant is as soon as possible after the leaves have commenced to fall, say November, for at that time of year the soil is warm and the roots will commence to grow. Avoid planting when the soil is sticky and wet, or during snow and frost. Remove the turf to a depth of 2 inches, dig out the soil one spit deep, shovel out the crumbs of fine soil, and fork up the subsoil one spit deep. Break up the bottom layer, and place the sods grass-side downwards on the subsoil, and also about one-half of the removed top soil. Place a stake firmly in the centre of each hole, the top of the stake to be the same height as the stem of the young tree. Arrange the roots horizontally and fill in with the remainder of the top soil broken finely. Tread the ground firmly after planting, and then apply the mulch of half-decayed manure.



ANALYSIS OF SOIL BY R.H.S.: *W. G.* The Royal Horticultural Society's chemist, Dr. J. A. Voelcker, M.A., 22, Tudor Street, New Bridge Street, London, undertakes the analysis of soil for Fellows at a reduced fee. Write to the secretary, Rev. W. Wilks, Royal Horticultural Hall, Westminster, for particulars. The soil should be forwarded to Dr. Voelcker direct. With regard to your question respecting the cost, this will be regulated by the nature of the analysis; the fee for a complete analysis of a soil being £3.

ANTIRRHINUM: *G. C.* Antirrhinums are not strictly annuals—that is, seedlings do not flower and perish in a single season, if grown from beginning to end out-of-doors. For this reason we should not advise their selection for forming one of "12 distinct kinds of annuals" at a competitive show. The Butterfly Delphinium is said to be an annual.

BOOKS: *H. H.* *The Young Botanist*, by W. Percival Weston and C. S. Cooper. You can obtain copies from our publishing department.

CROWN BOWLING GREEN: *J. I.* So far as the general formation of a Crown Bowling Green is concerned, with the exception of the raised centre, it differs but little from the ordinary Scotch green. Good drainage and a well-laid turf are essential to success in both cases. To secure a uniform fall from the crown to the edge we would suggest that the ground be set out in concentric circles at equal distances from each other (see fig. 38), commencing from the edge of the crown. Each circle would then have an equal rise or fall from the one immediately adjoining it, and a true gradient thus obtained. Supposing, by way of illustration, that the crown—which is set out 9 inches higher than the edges—is 10 feet across, and

from its centre to the edge of the grass is 65 feet. By striking out four circles, the first of which is 15 feet from the border of the crown, and each additional circle 15 feet from the last, it would be found that a uniform fall would be obtained by making the inner circle $2\frac{1}{4}$ inches below the level of the crown, the second circle $2\frac{1}{4}$ inches below the inner one, and so on, until the last circle would be exactly 9 inches below the level of the crown. In other words, a gradient of $1\frac{1}{4}$ in 100 would be obtained. The corners might be made dead level, as this could not possibly interfere with the game as played on such a green. We would advise laying the turf from the centre to the circumference. The following method is employed in the Liverpool parks, where 22 greens are provided for the use of the game of bowls. A trench is made 12 feet in width, and in the bottom of this is placed a layer, 4 inches in depth, of clinkers. On the top of this are placed the old turves taken from the top of the next trench. The sods are placed grass sides downwards, and they prevent the clinkers, used as drainage material, becoming choked with the finer soil. Above this layer of turves is placed soil to the depth of about 12 inches. After careful levelling this is covered with a layer of sea-sand about $\frac{1}{2}$ inch deep. Another trench, 12 feet in width, is dug out, and the process repeated, until the bowling green is made. When all is well settled down, the top is covered with the finest turf procurable. In your case you can make the trenches 15 feet wide. You will find some in-

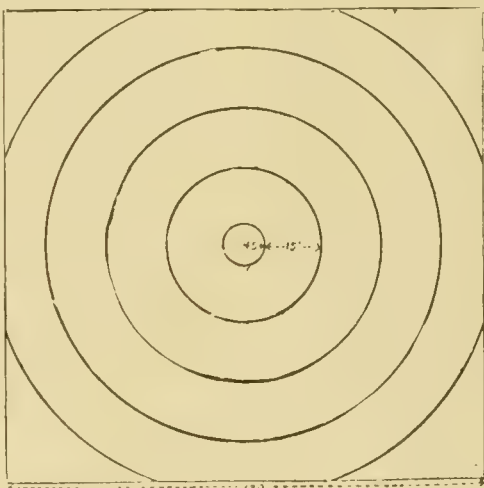


FIG. 38.—CROWN BOWLING GREEN.
Showing how to secure a uniform fall.

formation on Bowling Greens in *Lawns and Greens*, by T. W. Sanders, obtainable from our publishing department, price 1s. 2d. free by post.

FIGS, PEACHES AND CARNATIONS: *W. E.* The Fig is badly affected with disease, caused by the fungus *Cercospora holleana*, whilst the Peach is equally badly attacked by silver-leaf disease. As the complaint is confined in each case to a single tree, and there are others to which the fungus may spread, it is advisable to destroy those diseased at once, burning every portion. Afford fresh soil if other trees are planted in their places. For checking rust on Carnations spray the plants with potassium sulphide, using $\frac{1}{2}$ oz. in two gallons of water.

GARDENING EMPLOYMENT IN AMERICA AND AUSTRALIA: *G. V. J.* You will find information regarding the conditions affecting gardeners in America in the issue for February 19, 1910, p. 122. With regard to Australia, a note on gardening in Australia and New Zealand, written by the late Mr. James McIndoe in reply to a question by *W. R.*, was given in the issue for May 16, 1908, p. 324. You cannot advertise for a situation in America unless you reside there, this being contrary to law, but you may do so in the case of Australia.

GRAPES FAILING TO COLOUR: *S. H. G.* Grapes may fail to ripen perfectly from various causes. In your case it is probable that the roots have entered unsuitable soil, in which case you must

lift them late in autumn, and relay them nearer to the surface of the border in some good, rich soil. If your subsoil is cold and wet, the bottom should be covered with a thin layer of concrete to prevent the roots from penetrating again into it, taking particular care to give the border efficient drainage. It is possible that the border was made too loosely, as this is a very common error. In regard to the tank, we would strongly advise you to remove it and place it where it will not interfere with the roots. You must also clear out all the old soil on which the tank has been standing. We do not think the methylated spirit will have interfered with the colouring of the Grapes, as it is commonly used for the destruction of mealy bug. If you disturb the roots to any great extent this autumn, the vines must only be allowed to develop a very moderate crop of fruit.

INJECTOR FOR CARBON-BISULPHIDE: *T. T. & Co.* Insert a small advertisement.

JOBBER GARDENER: *W. W.* You ask—Should a man who is engaged at six different places on as many days of the week be regarded as a professional gardener? This depends entirely upon his previous training. If he has been engaged in gardening or nursery work as a profession from a boy upwards he could properly lay claim to the title, but if he is one of those who take up jobbing gardening after having failed in other walks of life he is merely a garden labourer. A bothy boy is only a prospective gardener. He is not a professional gardener any more than a hospital student is a qualified doctor. Some day or other it may be hoped that gardeners will have a hall mark which will serve to distinguish qualified members of the profession.

NAMES OF PLANTS: *M. H.* *Lonicera in volucrata* (syn. *L. Ledebouri*).—*Frank Newman*. The *Viola* is a garden seedling. If it was found in India it must have been introduced there.—*W. A.* A spray of *Ruscus aculeatus*, the common Butcher's Broom, that has been coloured by a red aniline dye. They are sold in bunches in Covent Garden Market, some being dyed a blue colour.—*T. N.* 1, *Periploca græca*; 2, *Lactuca Plumieri*; 3, *Sisyrinchium striatum*; 4, *Juniperus chinensis*; 5, *Cratægus tanacetifolia*; 6, *Geranium* sp. (too much withered).—*J. E.* 1, *Lathyrus sativus*; 2, *Omphalodes linifolia*; 3, *Pisum elatius* var. *umbellatum* "Crown Pea"; 4, *Alyssum argenteum*.—*A. Young*. The scented, leaved shrub is *Myrica cerifera*; 2, cannot recognise this from such a shrivelled scrap; 3, *Oxycoocus macrocarpus*.—*R. W. N.* 1, *Myrtus Ugni*; 2, *Diosma ericoides*. (Thanks for contribution to R.G.O.F. Box).—*Dejuinere*. 1, *Senecio Clivorum*; 2, *Veronica longifolia* var.; 3, *Achillea Ptarmica* fl. pl.; 4, *Lychnis chalcedonica*; 5, *Veronica longifolia* var.; 6, *Leycesteria formosa*; 7, *Spiraea arifolia*.—*R. G.* *Cypripedium Nellie* (Charlesworthii \times *tonsum*).—*Villa*. 1, *Sophranitis grandiflora*; 2, *Oncidium flexuosum*; 3, *Cœlogyne flaccida*; 4, *Odontoglossum Andersonianum*; 5, *Oncidium pubes*.—*R. S.* 1, *Pteris longifolia*; 2, *P. tremula*; 3, *Dendrobium Hedycesmum*; 4, *Brassia verrucosa*.—*O. G.* We do not undertake to name Roses; send the variety to some grower who can compare it in his collection.

PEA FOR IDENTIFICATION: *Beeswax*. The variety is known as the Purple-podded Pea.

RENT OF ROOM: *T. S.* You had better consult a local solicitor.

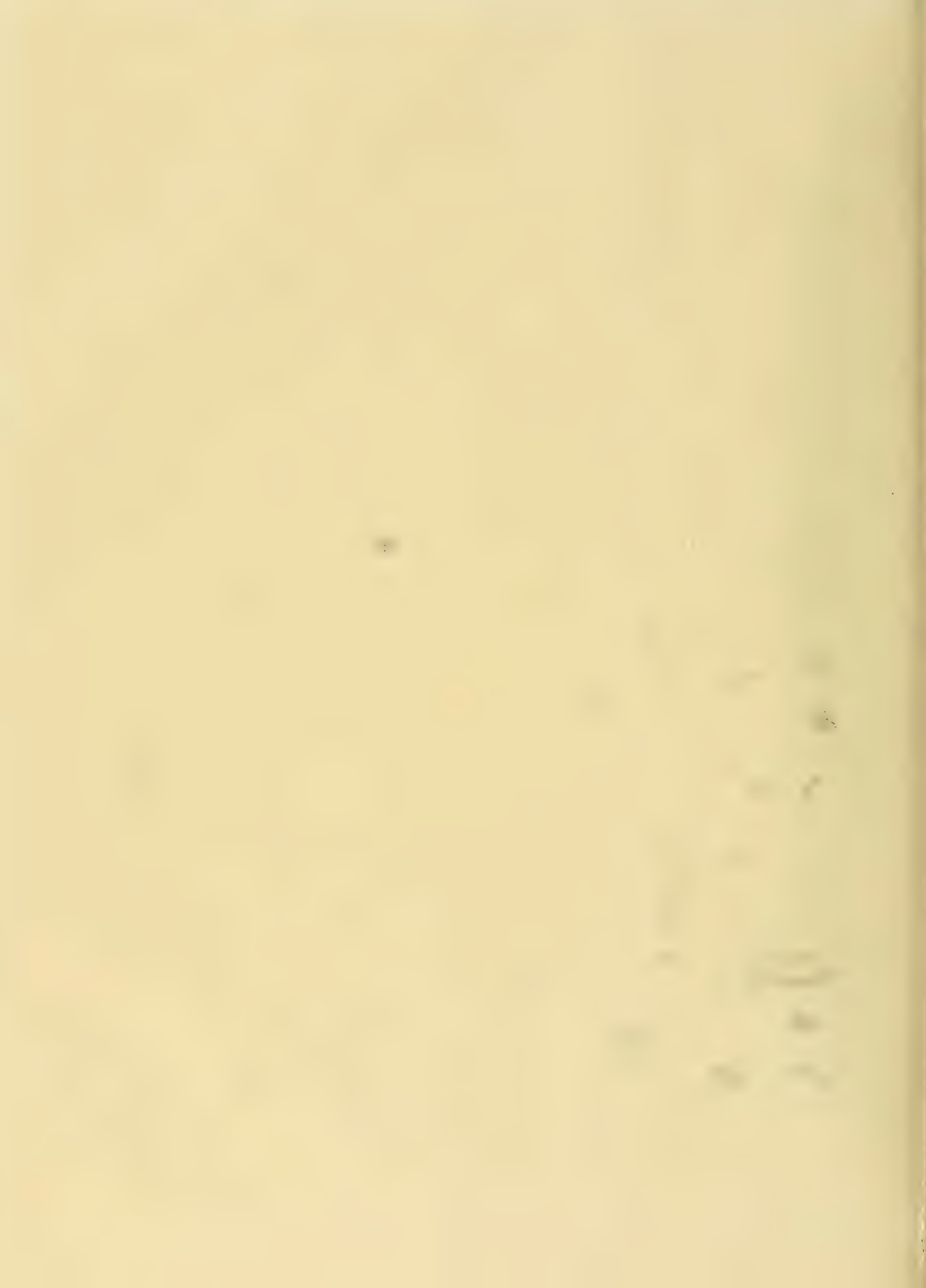
TOMATOS AND CUCUMBERS FOR WINTER: *W. G.* Winter Beauty, Sunrise and Kershaw's Premier are all good varieties of Tomato for fruiting in winter. Kershaw's Premier is not much known, but it is one of the best all-round Tomatos in cultivation. One of the best winter-fruiting Cucumbers is that known as "All the Year Round."

Communications Received.—*W. H. C.*—*R. A. R.*—*J. T. L.*—*W. B.*—*J. T. W.*—*G. G.*—*G. H.*—*W. B.*—*J. J. F.*—*T. B.*—*C. G.*—*R. S. Q.*—*A.* and *C. B.*—*J. D. G.*—*B. L.*—*R. F.*—*E. H. J.*—*E. W.* & Sons—*A.* and *B.*, Ltd.—*S. W.*—*W. H. Y.*—*F. E. B.*—*W. P. R.*—*R. F.*—*F. J. K.*—*E. Y. W.*—*H. H. W.*—*W. F.*—*T. S.*—*C. T. D.*—*P. J. E.*—*R. W. W.*—*H. M. V.*—*H. W. W.*—*Sir D. M.*—*T. R. V.*—*A. D. W.*—*W. V. G.*—*F. K.*—*Royal Meteorological Society*—*Minister of Agriculture (Melbourne)*—*A. V.*—*W. M. D.*—*J. Hope*—*W. A. Bees, Ltd.*—*S. C.*—*J. L.*—*L. G.* (*Brussels*)—*F. M.*—*W. L. V.*—*H. S. T. G.*—*Squibs*—*A. G.*—*A. H.*—*E. S.*—*D. A. W.*—*T. H.*—*W. W. P.*—*A. D. E.*—*F. K.* (*Tokio*).



Photograph by H. N. King.

BELVOIR CASTLE, THE RESIDENCE OF THE DUKE OF RUTLAND.





THE

Gardeners' Chronicle

No. 1,233.—SATURDAY, August 13, 1910.

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CLANDON PARK, GUILDFORD.

(See Supplementary Illustration.)

THE rule of the holiday maker is to go to the sea or to pass beyond the confines of these islands to other lands in search of beauty. It is not for me to decide whether the seaside is the best place to spend a holiday, but I may say that no one need go beyond the seas to find varied and charming scenery. Londoners have only to travel a few miles into Surrey to find the most delightful country surroundings and many magnificent gardens. One such garden is that at Clandon Park, the home of the Earl of Onslow, G.C.M.G.

The small station of Clandon is situated on the L. & S.W. Railway, and is 25 miles from Waterloo, whilst the entrance to Clandon Park is one mile from the station. The park is not a very large one, but it is naturally undulating, and it contains many handsome trees, while the surrounding views of hill and vale, woodland and pasture are very beautiful. The entrance from Clandon is not the principal one, that being situated on the Guildford road, but it is a convenient entrance, for it abuts upon the lawns and gardens. The mansion

was built in 1730; it is a formal-looking structure, conveying an impression of internal comfort and external strength rather than architectural beauty.

The sunken garden is a comparatively modern feature, which was modelled upon the garden at Hampton Court, and its character may be seen in the supplementary illustra-

pergola clumps of *Lilium auratum* constitute the principal feature. Near by is a handsome bower covered with a plant of *Wistaria sinensis*, which forms a beautiful object when in flower.

Passing along the lawns of beautiful turf between superbly-coloured groups of Acers, the lower lawn is reached, and a row of



[Photograph by the Earl of Onslow.]

FIG. 39.—CLANDON PARK: THE IRIS GARDEN IN JUNE.

tion. It has a pool in the centre, and the borders are occupied by bold groups of handsome flowers, whilst specimens of clipped plants are dotted over the grass. From a higher point close to this garden there is an excellent view of the mansion over the pergola (see fig. 46), which has a Japanese lantern at one end and the sunken garden at the other. The pergola is furnished chiefly with Roses and Clematises, and they grow and flower abundantly. In the borders within the

Irish Yews on the left that look like sentries. In a parallel row, Golden Yews have been planted more recently. On the rise of the lawn from this spot is an avenue of *Cupressus Lawsoniana* (see fig. 42), with occasional vases for plants, and the avenue leads to a rather higher level than Lady Onslow's "Aromatic" garden, which comes well into view. In this garden may be seen the only formal planting at Clandon Park, and, although the beds are of a set



[Photograph by the Earl of Onslow.]

FIG. 40.—CLANDON PARK: DAFFODILS FLOWERING IN THE IRIS GARDEN IN SPRING.

design, nevertheless the plants utilised are of sufficiently free-growing habits to prevent any severe aspect. As far as flowers are concerned, the feature at the time of a recent visit (August 5) was the gorgeous *Anchusa italica*, known as "Dropmore variety," but the plants which entitle the garden to its name include, amongst others, Roses, Lavender and Southernwood. On the contiguous terrace are grand specimens of Hydrangeas in tubs. Mention may be made of the Cranley Avenue, with its inner line of Copper Beeches and its outer line of Green Beech; it extends to the front entrance, and was designed as the drive leading to the Guildford road before the present line through Clandon was constructed.

Turning from the mansion and its surroundings, the visitor will find the most charming

finest varieties then in commerce as a nucleus. Every year since that time additions have been made, until, at the present, the collection is as representative as any in these islands. The varieties are legion, and it were hopeless to expect that space would be allowed me here to mention even a selection of them. Here and there are serpentine beds of English and Spanish varieties, and, at the foot of the bank, clear of the water in winter and 3 inches under it in summer, are splendid plants of *I. lævigata* in variety. A line at the top of the bank near the path is formed of *I. stylosa*, where the plants get literally baked in summer. To maintain the attraction there are great clumps of *Lilium candidum* and *Hemerocallis*, while here and there are uncommon *Iris* species, and the finer of Sir Michael Foster's

greatest luxuriance. *P. denticulata* Cashmeriana sends its flower-stems up to a height of 30 or more inches, and at the summit of each is a ball of blossoms as large and as shapely as a tennis ball; *P. japonica* has immense leaves, and such specimens of *P. rosea* are seldom seen elsewhere. Some appear to live in water, whilst over the roots of all the species a flowing stream can be turned at will. The gardener, Mr. Blake, is exceedingly proud of the plants, and there is every excuse for this. Besides the Primulas, there are clumps of *Meconopsis Wallichii*, *M. integrifolia*, and *M. paniculata*, with thousands of Forget-Me-Nots and Polyanthuses. Mr. Blake has formed a nursery for the raising of Primulas, and has already many thousands of plants still in the seed beds or pricked out into suitable situations. The day will probably come



FIG. 41.—CLANDON PARK: THROUGH THE IRIS GARDEN.

features of Clandon Park in the Iris border and Primula dell.

THE IRIS BORDER.

Having spoken of Lady Onslow's "Aromatic" garden, a regard for consistency should cause me to call the Iris border Lord Onslow's "Iris garden," since it is his especial delight and hobby. It is entered by a steeply-sloping, stepped path, and on the left of the path Bamboos rise to a height of 12 feet or more, whilst a hedge of Sweet Brier is on the right hand. The Iris border extends for 250 yards, and its average width is 3 to 4 yards. Its charm in spring lies in the immense clumps of such popular Narcissi as Sir Watkin, Empress, Emperor and others (see fig. 40), and these flowers are succeeded by the Irises. It is 14 years or so ago since Lord Onslow commenced to form the border, and he procured all the

hybrids may be seen in carefully-selected places. *I. Snow Queen* and *I. sibirica alba* are shown in fig. 41.

At the back of the border there are superb groups of *Spiræas* suitable to such a situation, whilst on the opposite side of the canal, where it was originally intended to cultivate *Liliums*, there are conspicuous masses of *Rhododendron molle* in variety, *Alströmeria aurantiaca*, *Salvia "Fireball,"* *S. patens*, *Atriplex hortensis*, and *Spiræa giganteum*. In the winter season colour effects are afforded by the Willows, Dogwood and *Rubus biflorus*. It is a wonderful garden, with changing features during the whole year.

THE PRIMULA DELL.

Totally different to the Iris garden in every respect is the dell in which the hardy Primulas are cultivated. The plants grow with the

when the Primula dell will rival the Iris border in its attractiveness, and, fortunately, there is plenty of space for both gardens to grow in extent.

THE WATER GARDEN AND MAORI HOUSE.

A passing reference should be made to the water garden and the Lily pool, situated near to the Maori Council House, which is a reminder of the days that the Earl of Onslow spent in the service of his country in New Zealand. The water is notable for the magnificent clumps of hardy perennials about its banks as much as for the aquatic plants. There are groups of *Kniphofias*, *Senecio*, *Crambe*, *Inula*, *Verbascum* and other plants, with many Irises in the margins of the water and on the soil immediately adjoining it. Some fine plants of *Rosa rubrifolia* may be seen, and plants of *Iris lævigata*, continuously

in water. Near the Maori Council Chamber (see fig. 43), which is finely carved by New Zealand natives, is a Water Lily pool, the congenial home of these charming Nymphaeas, of the Canadian bull frog, whose tones are often heard at certain seasons of the year.

The supply gardens and houses, the historic structure known as Temple Court, now the residence of Lord Onslow's agent, Mr. Bowles; the kitchen gardens, the glasshouses, and the fruit plantations have features of interest to the visitor, and, the excellent condition of the gardens reflect much credit upon Mr. Blake, who has served Lord Onslow as gardener for a period of nearly 20 years. H.

It is too early to estimate this year's seed crops; but it is likely that the seeds offered next season will be from the 1908 crops, in which case the sowings will have to be made much thicker than usual. *P. Aquatics.*

THE NATURAL HISTORY OF CONIFERÆ.

(Concluded from p. 96.)

Thus the design of the conifer, when compared with that of the broad-leaved tree, seems to be rather the result of an alternative policy than

withstand injuries or are exposed to more numerous foes. In other words, it is conceivable that conifers are more vulnerable and more attacked.

This suggestion seems at first sight to gain support when we call to mind the considerable mortality of transplanted conifers that die from desiccation. Yet we are not justified in regarding this fact as denoting any greater susceptibility to injury on the part of conifers when compared with broad-leaved trees: to arrive at any conclusion, it would be necessary to compare the death-rate of transplanted evergreen conifers and dicotylous trees equally suited to the climate and of

NOTES FROM A "FRENCH" GARDEN.

THE Melons planted early in April have been cleared away, and the ground has since been hoed and mulched lightly for the benefit of the Cauliflowers which were planted there five weeks ago. The frames and the lights have been removed to Melons planted under the cloches in the middle of May. This crop must receive careful attention to promote a quick growth, as the fruits should be ready for cutting in September. The lights should be removed from the batch of Melons planted late in April or early in May, as the glass would be injurious to the Cauliflowers growing between them.

Should the weather be dry, caterpillars will cause much damage to the Cauliflowers. These pests should be removed by hand and destroyed. Frequent waterings will act as a slight check to them.

The Carrots sown in the middle of July must be thinned as soon as possible. They will require frequent waterings for the next five or six weeks.

French Beans sown late in July are now well above the soil. The ground should be stirred frequently. The plants are spread out as much as possible by putting some soil in the middle of the clumps.

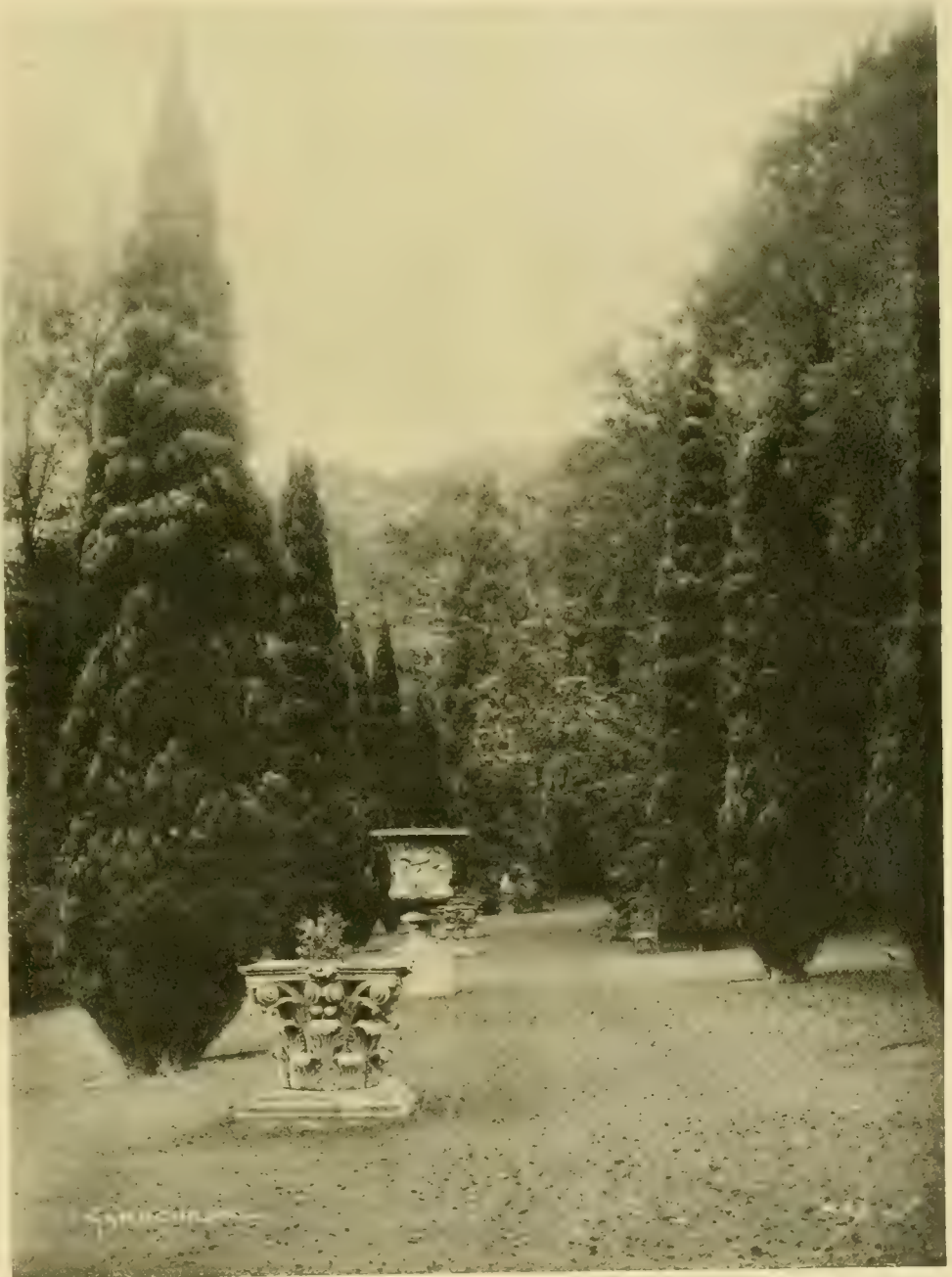
The Celery blanchied eight or ten days ago is now ready for market. The beds should be broken up and the soil utilised for the autumn sowings. The main batch of Celery should be given frequent and heavy waterings. If Celeriac is grown, the bottom leaves must be removed from time to time. When the plants are well established, some growers cut off all the side roots with a long knife to throw all the growth into the main root.

Lettuces raised from seeds sown in the middle of July will soon be planted out at a distance of 9 or 10 inches apart. If a succession is required, a few seeds of Lettuce Passion may now be sown to provide plants for out-of-doors late in September.

The winter batches of Endive and Batavian Green should now be planted out. When the ground is very rich they require a distance of 11 to 12 inches apart, but in sandy and poor soil 9 to 10 inches will be sufficient space for them.

A new year begins at this season in the "French" garden, and the grower must arrange for a rotation of crops for the coming year. He must also estimate the quantity of manure he will require for the making of the hot-beds. It is now time to collect the first half, which is termed "dry manure." Where the supply of decayed manure is limited, a substitute may be found in peat-moss. This will be dug in, leaving the decayed manure as a top dressing. All the frames, lights, and cloches should be examined, and repaired where necessary, and the lights painted.

Cultivation under the "cold" system is likely to be largely adopted in "French" gardens next spring. This method incurs little labour and cost; but it is necessary to have a large quantity of decayed manure in hand, as this system requires a fair amount of this material.



[Photograph by H. N. King.]

FIG 42.—CLANDON PARK: A CUPRESSUS AVENUE.

necessarily inferior in plan. Yet there remains to be explained the fact of the extinction of many conifers and the general victory of broad-leaved dicotylous trees.

Even if it is admitted that in cold-temperate regions conifers thrive better than dicotylous trees under certain more or less unfavourable conditions, and work quite as well as the latter under some more favourable conditions, it is, nevertheless, quite conceivable that, as compared with broad-leaved trees, conifers are less able to

equal ages. (It would be interesting to have the experience of gardeners as to the relative mortality in the transplanted evergreen, hardy species belonging to the two classes.)

Yet many facts point to the conclusion that conifers are less capable than our broad-leaved deciduous trees of recovering from injury. When their leaves are destroyed by smoke, by fungi, or by insects, conifers readily perish: whereas the Oak and other deciduous trees may be defoliated year after year by insects without any fatal result.

Only few conifers, such as the Yew, can withstand considerable cropping or persistent browsing, whereas broad-leaved trees can be pruned drastically. Again, conifers readily succumb to serious attacks by bark beetles that tunnel in their bark; but the Ash, Elm, and other leaf-shedding dicotyledons can endure the severest attacks of bark beetles for 60 years or more. Even insects tunnelling in wood cause graver injury to the conifer than to the broad-leaved deciduous tree.

We can in part—but only in part—explain the smaller power of recovery of the conifer. In the first place, the dicotyledon has crowds of resting-buds, all ready to develop into new shoots and produce new foliage when occasion arises; moreover, it usually has the power of producing new buds on old parts of the trunk, stump, or roots. The ordinary conifer, on the contrary, has comparatively few resting-buds, and its power of producing new ones on older parts of the tree is limited or wanting. Secondly, when the leaves of a conifer are entirely destroyed by any agency, the tree loses organs that required several years to produce, and whose replacement will demand several years. This loss of foliage represents not only so much loss of substance, but also a prolonged decrease in power of producing new substance. The complete defoliation of a deciduous dicotyledon, on the other hand, involves the loss merely, at most, of one season's crop of leaves; indeed, the lost foliage may be replaced in the same season and within a few weeks of the loss. Thirdly, the weakness of recuperative power on the part of the conifer may be also partly due to a possibly slower rate of working of the tree, and this may result in slower healing of wounds and slower replacement of injured organs.

Finally, the question arises: "Have conifers or broad-leaved deciduous trees the more numerous serious fungal and animal foes?" When we think of the hordes of insects and fungi attacking orchard trees, and when we compare these ravages with the apparently healthy condition of many conifers growing in our gardens, we inevitably gain the impression that the conifers are less attacked by these foes. But the comparison thus instituted is specious: any reliable comparison must necessarily be instituted among wild trees of different kind growing in their own countries and with natural surroundings, and must not be between artificial races of plants and exotic plants far removed from at least many of their natural foes. For this reason I therefore institute comparisons between those coniferous and dicotylous trees that largely enter into the composition of forests in Northern and Central Europe. The result of the comparison (which is given in very abbreviated form in the subjoined table) indicates that evergreen conifers have the larger number of *serious* foes among fungi and insects, and that the deciduous conifer—the Larch—stands in this respect between evergreen conifers and deciduous dicotylous trees.

	Approximate Number of Species of Serious Foes.	
	Fungi.	Insects.
Common Silver Fir (<i>Abies pectinata</i>)	14	18
Common Spruce (<i>Picea excelsa</i>)	18	30
Scots Pine (<i>Pinus sylvestris</i>)	15	43
European Larch (<i>Larix decidua</i>)	9	18
Beech (<i>Fagus sylvatica</i>)	5	21
Birch (<i>Betula alba</i>)	3	10
Hornbeam (<i>Carpinus Betulus</i>)	2	6
Alder (<i>Alnus glutinosa</i>)	2	7
Ash (<i>Fraxinus excelsior</i>)	2	4

The larger number of serious foes of the conifers may be due either to the longer geologic periods during which their evolution was possible, or to the greater facility of evolution of foes attacking relatively weak victims, or it may merely represent another aspect of the fact that the same degree of hostile attack has a graver effect on the evergreen conifer than on the deciduous dicotyledon. *Percy Groom, D.Sc.*

HARDY FLOWERS AT SUMMERVILLE, DUMFRIES.

A LARGE collection of hardy flowers is cultivated in the gardens at Summerville, Dumfries, the property of James Davidson, Esq. The *Eryngiums* or Sea Hollies include such species as *alpinum*, *amethystinum*, *Oliverianum* and *Bourgatii*. *Actæa racemosa* is also admirably grown, and there is a good representation of the best of the *Helianthus*es, including such double forms as *Soleil d'Or*, *maximus*, and *plenus*. The genus *Heliopsis* is represented by two or three species and varieties, *lævis*, *Wolley Dod's* variety, and *pitcherianus* being, perhaps, the better sorts. *Ligularia macrophylla*, known now as *Senecio Ledebourii*, with *Senecio pulcher*, and one or two other species were fine in their own way. It is seldom we see the *Silphiums* in gardens, but, at Summerville, *Silphium perfoliatum* variety *connatum* always does well, although it was not in bloom at the time of my visit. It is a good back-row plant, and is distinct, with its bold foliage and its heads of yellow, composite flowers.

spectabile and *C. calceolus*; *Orchis foliosa* was especially fine. An unusually good plant of *Dianthus Napoleon III.* was in bloom. It is still the finest of the Mule Pinks, but its profusion of crimson, double flowers exhausts it so much that it is difficult to retain it long, unless it is constantly propagated. A good plant of the rather scarce *Erica cinerea coccinea*, with scarlet flowers, was in bloom in one of the borders. Another good plant was the bright *Prunella Webbiana*, said to be of garden origin, and much finer in its red colour than *P. grandiflora*, which it resembles in habit. There were many other interesting plants in the borders, such as a huge plant of *Philadelphus microphyllus*, which here belies its reputation as a shy flowerer, covering itself annually with its small, white, sweet-scented blooms.

Alpine flowers are mainly cultivated in the front of the borders, or on low rockeries. Among the most successful of the dwarf *Irises* is the lovely little *Iris cristata*, which spreads into large masses, and flowers very well. *Philesia buxifolia* requires special treatment, being covered here with a handlight, the top of which is re-



[Photograph by H. N. King.]

FIG. 43.—CLENDON PARK: THE MAORI COUNCIL HOUSE.

Centaureas succeed well, and include the best varieties of *C. montana*, *C. dealbata*, *C. macrocephala*, *C. babylonica*, and *C. ruthenica*. There are large masses of *Sidalcea Listeri* and *S. candida*. Not many of the *Alstroemerias* are hardy in the district, and *A. psittacina* suffered much last winter, though a small plant is left; but *A. chilensis* is hardier. *A. aurantiaca* and its variety *aurea* very well displayed their glowing orange and yellow flowers. Although not a popular class of plants, a few of the *Symphytums* are worth growing, and, of these, that at Summerville, *S. bohemicum*, is probably the best, with red-purple flowers. *Scabiosa caucasica*, both the typical lavender and the white varieties, do splendidly. *Eriophyllum cæspitosum*, frequently known as *Bahia lanata*, was giving plenty of its yellow flowers. *Verbascums*, *Lychnis chalcidonica*, both single and double, and other *Lychnis*es were showy; and *Spiræas*, *Astilbes*, *Achilleas*, and other good border flowers were present in variety.

Among the other border plants in bloom at the time of a recent visit, were a fine clump of the Kilmarnock Orchis, and good varieties of some of the other hardy Orchids, such as *Cypripedium*

moved in summer. It is thriving splendidly, and gives many of its scarlet, tubular, *Lapageria*-like flowers. The *Ramondias* and *Haberleas* are most successful here when treated in the same way, and flourish to perfection. In the corner in which these *Ramondias* are cultivated, *Xerophyllum asphodeloides* had just finished its flowering, and the long spike showed how well it had done.

On the rockeries a number of the plants had already flowered. Among those in flower I noted a good plant of *Campanula Tomassiniana*, *C. pulla*, *C. pulloides*, *C. Portenschlagiana*, *C. G. F. Wilson*, the yellow-leaved form, and a good plant of the flower sold as *Campanula alpina*, which is a form of *C. rotundifolia*, the true *C. alpina* being little grown. *Hypericum confusum* was very fine, but *Saxifragas* were nearly out of flower; *Sedums* and *Sempervivums* are well represented in the collection. *Dianthus*es, *Silenes*, *Oxytropis*es, *Ericas*, Alpine *Geraniums*, *Erodiums*, *Potentillas*, *Erigerons*, *Gypsophilas*, *Arenarias*, *Achilleas*, *Androsaces*, *Drabas*, and other favourite genera are well represented in this good and carefully-cultivated collection, the general condition reflecting credit upon Mr. Davidson and his gardener, Mr. J. Wilson. *S. A.*

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables and Summaries, ante, pp. 77-82.)

(Continued from page 98.)

4, MIDLAND COUNTIES.

BEDFORDSHIRE.—The fruit crops in this locality are very disappointing, especially with regard to Apples, Pears, Plums, and Cherries. Small fruits are about the average, and the quality is good. I attribute the failure of the Apple, Plum, Pear, and Cherry crops more to unripened wood than to late frosts. Fruits which set became yellow, and dropped. The soil is a light loam, resting on a sub-soil of sand and gravel. *George Mackinlay, Wrest Park Gardens, Ampt-hill.*

BUCKINGHAMSHIRE.—The failure of the fruit crops was, to a very large extent, due to the low temperatures which prevailed from April 23 to May 10. The following dates, with the degrees of frost registered, prove this:—April 23, 5°; 27, 4°; 29, 4°; 30, 5°; May 3, 2°; 5, 1°; 7, 2°; 8, 2°; 9, 7°; 10, 5°. *J. G. MacGregor, Mentmore Gardens, Leighton Buzzard.*

—The late spring frosts practically destroyed the whole of the Apple, Pear, Plum, Gooseberry, and Currant bloom. In very few gardens, orchards, or allotments in this district are there any fruits. Mid-season and late Strawberries furnished heavy crops of excellent quality; indeed, we have never had a better season for Strawberries. The fruit trees are, on the whole, healthy and clean, with the exception of outdoor Peaches; the young growths of these were badly damaged by frost and wind. Our soil is a heavy retentive loam, resting on clay, and the natural drainage is bad; because of this, our crops are generally deficient in wet seasons. *W. Hedley Warren, Aston Clinton Gardens, Tring.*

—The fruit crops are much under the average; the cold nights during the time the trees were in blossom caused the flowers of Apple and Pear trees to drop, in many cases before they had expanded. The best crops of Apples are found on pyramidal trees, the varieties Grenadier, Lodgington Seedling, Lane's Prince Albert, and Peasgood's Nonesuch being amongst the best of the culinary varieties, whilst of dessert kinds Cox's Orange Pippin, King of the Pippins, Wealthy, James Grieve, and Charles Ross are carrying good crops of clean fruits. Pears are a failure, except on walls. Cherries, which are largely grown in this neighbourhood, were not more than half a crop, and the fruits cracked badly through the wet. Gooseberries are an average crop, and very good. Black Currants, which are largely grown here by market gardeners, are a failure. Strawberries were a good crop, but the berries were depreciated by the rains. *Chas. Page, Dropmore Gardens, Maidenhead, Bucks.*

DERBYSHIRE.—The crops of Apples, Pears, and stone fruits are disappointing. There was an abundant show of blossom, which failed to set, owing, no doubt, to last year being dull and sunless. Small fruits are good average crops, and the trees, so far, are clean. Strawberries have furnished a good crop of fine quality berries. The old Black Prince variety is still one of the best sorts. This, with Royal Sovereign, President, Dr. Hogg, Gunton Park, and Waterloo, form six of the very best varieties for small growers. Raspberries and Loganberries are looking well. The latter is one of the most useful fruits of recent introduction. The Loganberry is very satisfactory when planted under glass in a cool house, where the fruits ripen a month earlier than on plants in the open. Vegetables are looking well, and Potatoes escaped the late frosts. One of the best early Potatoes is May Queen, whilst of Early Peas, Bountiful is a good cropper and of fine quality. *Bailey Wadds, 181, Uttoxeter New Road, Derby.*

HERTFORDSHIRE.—Apples, Pears, and Plums are much under the average, and in many gardens they are a complete failure. In a few sheltered gardens the trees are carrying average crops. The Plum crop is the worst in this district for 20 years. All kinds of fruit trees gave promise of good crops until Tuesday, May 3, when 9° of frost were registered. *C. E. Martin, The Hoo Gardens, Welwyn.*

—Although fruit trees generally promised well for good crops early in the year, the late frosts and long continued easterly winds in spring severely damaged the young fruits. The Pear and Plum crops were ruined while the trees were in full bloom; most of the Plums that escaped the frost, also many Apples, shrivelled and fell from the trees as a result of the cold winds. Peaches are carrying moderate crops of good fruits. Small fruits are good, and Strawberries have been plentiful. Insect pests have been very troublesome to fruit trees this year. *H. Prime, Hatfield House Gardens, Hatfield.*

—The fruit crops in this locality are very bad. Apples are scarce, whilst the Pear and Plum crops are failures, especially on standard trees. There was a good promise for a bountiful fruit year, but the late frosts ruined the blossom, and, in many cases, the damage was done whilst the flowers were in the bud stage. Peach and Apricot trees, which were protected, are carrying good crops. Our soil is a stiff clay. *Edwin Beckett, Aldenham House, Gardens, Elstree.*

—With a few exceptions amongst small fruits, the fruit crops in this district are failures such as we have not experienced for some years past. Apples are bad, although a few varieties, such as Lane's Prince Albert, Stirling Castle, Keswick Codlin, and Robert Fish, are showing an average yield. Boskoop Giant Black Currant is again proving a good and productive variety. *Wm. Whitelaw, Batchwood Gardens, St. Albans.*

LEICESTERSHIRE.—As stated by *Southern Grower* in the issue for July 9, there is a "mystery" surrounding the partial failure of the crops of Apples, Pears and Plums. There was an abundance of bloom on all the varieties of fruit trees, but it was of a very fugitive nature and failed to set, especially on trees exposed to the north-east winds which prevailed during the time the trees were in bloom. Apple trees in sheltered positions have full crops of fruit. A market grower in this district, who last year had not a single bushel of Apples on his trees, informs me he has a good average crop of Apples this season. This confirms my opinion that there was a lack of stability in the fruit buds on trees which carried a crop of fruit last year. There are no Plums or Pears, except on the wall trees. The Strawberry crop was very promising at the time of flowering, but owing to drought in June many of the flowers failed to develop. The heavy rains and dull days of July caused many of the berries to decay. There is a good average crop of Red and White Currants, whilst Raspberries and Loganberries are above the average. Gooseberries in the kitchen garden are more than an average crop, but orchard bushes are a failure, owing, mostly, to birds destroying the buds; this also applies to standard trees of Plum and Damson. Aphids and caterpillars have been very troublesome this season. *D. Roberts, Prestwold Hall Gardens, near Loughborough.*

—All kinds of fruit trees blossomed very freely with the exception of Pears on walls, which, however, set their fruits well, and have an average crop. The failure of the Apple crop cannot in this district be attributed to cold during the flowering period, because, with the exception of May 8 and the three following days, when only the earliest trees were in flower, the weather was very good. It is interesting that the trees which flowered during those four cold days have good crops; I am convinced the failure of the fruit crop is due to a deficiency of sunshine in the autumn of 1909. The only failure that can be attributed to spring frosts is the Gooseberry crop. A few bushes of these, partly sheltered by pyramidal Pear trees, have borne well; cordon Gooseberries on a north wall are carrying good crops, whilst those bushes quite in the open have none. All fruit trees are much cleaner than usual this season. *W. H. Divers, Belvoir Castle Gardens, Grantham.*

NORTHAMPTONSHIRE.—The failure of the fruit crops is due chiefly to several frosts which occurred when the trees were in flower. The soil is heavy, being principally clay. *Robt. Johnston, Wakefield Lodge Gardens, Stony Stratford.*

—There was a good show of blossom, but, owing partly to immature wood, the flowers were very weak. At the flowering period of Apple

trees we experienced abnormally dry weather and the fruits failed to set. Plums on walls are good, but we have scarcely any fruits on bush and standard Plum trees. Raspberries are very good. Our soil is a light, porous loam, overlying limestone rubble. *A. R. Searle, Castle Ashby Gardens, Northampton.*

NOTTINGHAMSHIRE.—There was a good promise for fruit in the spring, all fruit trees being covered in blossom, but cold winds caused many to drop. Apricots, Peaches and Nectarines were protected at night time while they were in bloom, and these have good crops. Apples are an average crop, but Pears are not so good. Cherries of all kinds have been extra good. Plums are about the average. Gooseberries, Red Currants and Raspberries are all very good, but Black Currants are poor. Strawberries have been very plentiful and of splendid quality. Our soil is of a light texture, on a subsoil of sand. *James B. Allan, Osberton Gardens, Worksop.*

—With the exception of Strawberries and Red Currants, the fruit crops are almost failures. Blossom was abundant on all the trees, but in the case of Plums it was small and weak, and probably partly from weakness and also from the sunless weather and cold winds the fruits failed to set. Of Apples, Bramley's Seedling, Newton Wonder, Lord Grosvenor, and Stirling Castle are the only varieties carrying fruits. Pears and Cherries are poor, and Black Currants dropped nearly all their fruits. Gooseberries are about half a crop. Wall trees have only a partial crop. *J. R. Pearson & Sons, Lowdham, Notts.*

OXFORDSHIRE.—This is the worst fruit year we have experienced for twenty years. Apples are a complete failure in many gardens; absence of bloom in the spring was very noticeable. Strawberries have been good, especially the variety Kentish Favourite. Black Currants are good, but we have very few Pears, Gooseberries, Currants (Red and White), Damsons or Apricots. Peaches out-of-doors are fairly good. Our soil being a light loam, resting on gravel, a showery season benefits flowers and vegetables. Roses are especially fine. *J. A. Hall, Shiplake Court Gardens, Henley-on-Thames.*

—Apple trees in this district did not bloom well, and fruits are very scarce. Plum trees were a mass of bloom, and at one time promised to give good crops, but when the fruits were about the size of peas nearly all turned yellow and dropped. Pears also bloomed well, but the weather was very cold, and scarcely any fruits set. Apricots, Peaches and Nectarines appeared to be affected by the same cause. The hail storms in June destroyed large quantities of Cherries. Raspberries, Strawberries, Currants and Gooseberries are all good crops, although some of the Strawberries were damaged by wet. The soil is very stony and shallow, requiring more manure than most gardens. *A. J. Long, Wyfold Court Gardens, Reading.*

SHROPSHIRE.—The fruit crops are very unfavourable, owing mostly to frosts and cold, dry winds when the trees were coming into bloom. Apples experienced an extra bad attack of the codlin moth; the orchard trees were not grease-banded this year and suffered severely in consequence. Apple trees in the kitchen garden were sprayed, and they escaped the pest, thus proving the advantage of preventive measures. *Alex. Haggart, Moor Park Gardens, Ludlow.*

WARWICKSHIRE.—The fruit prospects early in the season were very good. There was an abundance of blossom, but, owing to east winds and late frosts, all stone fruits and Apples are under the average. Small fruits are very good and well up to the average. Strawberries have been particularly fine, especially the variety Leader. The soil in these gardens is of a light nature, and the subsoil gravel. *Chas. Harding, Ragley Hall Gardens, Alcester.*

—The fruit crops this season, with the exception of Strawberries and Apples, are very disappointing. Small fruits in particular are very scarce, partly owing to frosts during the flowering period. Stone fruits are much under the average, Apricots and Cherries being almost failures. Plum trees blossomed freely, but the fruits set badly. Pears set better, but are not

up to the average. Figs in the open are much over the average, and providing the weather is favourable we shall have a good crop of this fruit. The soil rests on a gravel subsoil, and soon becomes dry. *H. F. Smale, Warwick Castle Gardens, Warwick.*

5, SOUTHERN COUNTIES.

BERKSHIRE.—The Apple crop is mostly a failure, although there are a few trees with a fair number of fruits. Pears and Plums are also scarce. Amongst small fruits, Gooseberries are above the average and very good in quality. Raspberries are about the average, whilst Strawberries have been very plentiful, although the berries have lacked good flavour. *J. Howard, Lenham Gardens, Newbury.*

— Although the trees flowered freely. Apples, Pears and Plums are extremely scarce, and many of these fruits that we have are cracking and dropping. *W. Fyfe, Locking Gardens, Wantage.*

— The crop of Black Currants is very bad, owing to spring frosts. We have had a good crop of Strawberries. Raspberries are small. Plums and Quinces are scarce. The soil in this locality is clay. It produces excellent crops of Wheat, Barley, Oats, and Beans. *Edward Freed, East Hendred, Stevenon.*

(To be continued.)

THE ALPINE GARDEN.

SAXIFRAGA FLORULENTA.

Of all the Saxifrages I have collected, this august and lonely plant is by far the most sensational to discover. Seen high above one's head, impregnable in the face of a dark granite cliff, the rich, glassy-green rosettes have a rare and impressive brilliancy. They are like nothing else I know, and their opulent verdure seems almost inappropriate in those gaunt places. The species, of course (it is rumoured that certain standard works do not know it as well as they should), stands far apart from all its kindred in a splendid isolation, possibly the oldest of all existing Saxifrages, and it is certainly among the grandest. It does not occur anywhere in the world except on the primary rocks of the Maritime Alps, in the ranges that centre round the great mass of the Argentera. To the west it extends to certain glens above St. Etienne de Tinée; it finds its easterly limit in the Valmasco Valley, where it is rare and poor. Elsewhere, within these bounds, it may be sighted by the persevering traveller in vertical rock-faces at about 7,500 to 8,000 feet, generally preferring, where possible, a directly easterly exposure (so as merely to have a few hours sunshine in the morning), but not showing itself very rigid in the matter of aspect, so long as it can be certain of a perfectly vertical position.

From repeated and almost intimate acquaintance with the plant this season, I have gathered one or two notions that may have a bearing on the problem of its culture. In the first place, its specific name is wrong and misleading. *Saxifraga florulenta* is not slow to flower—at least, not by any fault of its own. Its aim in life is to grow as quickly as it can, flower, and die. Unfortunately, it very often germinates in crevices that fail to offer it congenial soil or scope. And these plants it is that live on to an immense age, perpetually hanging fire, and unable to attain flowering strength. They form deep cones of dead foliage, with a dwindling rosette at the top, and at last they give up the struggle and die flowerless. One sees such ineffectual corpses on every other ledge, looking like sodden tufts off a poodle's tail. But more fortunate plants, which can follow their own inclination, grow merrily on into huge, wide rosettes and flower in about their fifth year from seed. I suppose I may have seen some

thousand plants: never once did I see an old specimen flowering; all the spikes were being thrown up by big, but quite young, rosettes, which in some four or five seasons had expanded to a stretch of 5 or 6 inches across. *S. florulenta*, then, either hurries on through a short life into flower if it can, or else it spins out a long and barren existence, which proves abortive in the end. If it doesn't succeed in getting up flowering force by its sixth or seventh year, I should doubt if a given specimen would ever flower at all. From comparing this season's leaves with those made last year, one can judge how very quickly the plant develops if circumstances allow. Clearly, generous conditions and culture are indicated.

But the vertical position is even more clearly indicated and stringently insisted on by *S. florulenta*. Never does it abandon this: even though I found it growing actually in moraine among *Viola nummularifolia*, it was always on its side, sheltered by slabs of stone. The appearance of the plant is deceptive, though not in the least villous or downy, but hardy and glossy emerald, and as spiny as any Juniper to touch, the plant has a far intenser hatred of surface moisture than anyone has



(Photograph by Brian Lynch)

FIG. 44.—*CISTUS PURPUREUS*, THE PURPLE-FLOWERED ROCK-ROSE.

yet allowed for. The reason for this strange fantasy may lie far back in the ages that saw the plant's evolution: the fact of it remains, and has to be coped with. Not only does *S. florulenta* invariably keep the vertical position in cliff or cave, or even open moor, but one can also gather the same lesson from its peculiar characteristic habit. For whereas *S. longifolia* recurves its leaves to welcome rain, *S. florulenta* always incurves its leaves, like an irritated Sea Anemone, so as to be doubly certain that the inner surface of its rosette receives no undue moisture. When you see the plant growing you at once realise the significance of that curious symptom. More than this, to make the explanation yet more inevitable, *S. florulenta* does, at last, recurve its foliage and open out. But this only happens when the plant is about to flower and die.

The mystery still remains why those hard, shiny, indestructible-looking leaves should have such a morbid horror of moisture. That they have it, though, is certain, and in that idiosyncrasy lies, I believe, the only real difficulty about cultivating the plant. In itself, *S. florulenta* has every sign of being a hearty and amenable species, asking only for generous cultivation, to grow ahead rapidly, to flowering size (alas! it

never proliferates; clumps and apparent offsets are only symbiotic seedlings). But it must be grown in such a position that overhead moisture does not lodge in the rosette, or even visit the rosette unduly. Moisture in the soil it requires, and tolerates almost to the extent of thriving in water runnels on a cliff. But its real good nature is foreshadowed by its indifference as to compost. I have seen it thriving equally heartily in moraine-dust, in peaty humus, in mossy silt, and in rich, yellow turfy loam. It is always on the granite, though, and can never, it seems, be too tightly and pitilessly squeezed into a crevice. It also shows its vigour by the readiness with which it appears to germinate wherever the seed falls, even if it be upon detritus, amongst grass and weeds, at the foot of a cliff.

Rare and restricted as this strange species is, it is nevertheless very abundant in the chosen places of its range: were it not for its incapacity to make headway against an uncongenial crevice, it might even be a spreading species. In nature it even tolerates full exposure to sun, but that shady gullies, just above the last Pines, are its favourite dwelling place, affords a significant hint. For some years past I have grown the plant in pots, losing a few annually, because, as I now realise, the pot stood level on the ground, and the rosette sat level on the pot. Encouraged by the fact that some survived, and inspired by personal acquaintance with the plant at home, I believe that, with rich soil and the horizontal position, one ought never again to lose a plant of *S. florulenta*, except through the glorious consummation of its flowering. On the cliff, I have from last year a fine, large rosette now established, and apparently unresentful of a calcareous cranny. I hope to put more specimens in various soils and minute crannies, in expectation that I may someday see that glorious viscid spike of nodding rose-pink bells. *Reginald Farrer.*

CISTUS PURPUREUS.

This is the finest red *Cistus* in cultivation. On several occasions I have found an inferior plant grown under its name, and have been surprised how rare the true plant really is. It grows about 4 feet high in a few years, and produces numerous flowers over a considerable period, each flower being nearly 3 inches in diameter. The colour is lilac-purple; at any rate, that is the nearest to it in the *Répertoire de Couleurs* published by La Société Française des Chrysanthémistes, but the great beauty of the flower is enhanced by the large, ruby-red spot near the base of the petals. In addition to this, and at the extreme base of the petal, hidden by the numerous yellow stamens, is a yellow blotch. The habit of the shrub is somewhat spreading, being quite as broad as it is high. It branches freely, and all the younger stems are clothed with a rusty pubescence. The leaves are usually oblong in shape but they vary to some extent, being sometimes broadest above the middle. They are slightly rugose, and covered with stellate hairs on the under side. The petioles are short, and joined together to sheath the stem. The flowers are terminal on the branches, and usually there are three together, two being frequently open at the same time. The young stems are somewhat sticky, and the resinous secretion exhales a peculiar fragrance. The sepals are broadly ovate, and, like the leaves, are covered on the under side with stellate hairs. The petals are broader than they are long, measuring $1\frac{1}{2}$ inches across, and overlap considerably; they are very broadly wedge-shaped; the filaments are yellow, and the anthers orange-coloured; the ovary is very densely clothed with silky hairs, and the style is very short, the stigma large and papillose.

Cistus purpureus (see figs. 44, 45) has been regarded as a native of the Levant, but Grosser, in Engler's *Pflanzenreich*, which includes a

Monograph of the Cistaceæ, describes it as a garden hybrid between *C. ladaniferus* and *C. villosus*. There is strong support for the correctness of this view, for a wild specimen has never been seen, nor have capsules or seed ever been described. This is the only purple-flowered *Cistus* figured in Sweet's Cistaceæ that has the fine basal spots which make the plant so distinct and ornamental.

This brings me to the other kinds with spotted petals, and I find that all of them are garden hybrids, originating from *Cistus ladaniferus maculatus*, as the parent responsible for the spots. There is, however, I believe, only one other hybrid in cultivation, viz., the well-known *C. cypricus*, a cross from *C. laurifolius*. It is a free-growing shrub, with white flowers and dark-maroon-red spots, similar to those of *C. ladaniferus maculatus*, but differing rather in shape, being much rounder. The flowers are several in each inflorescence, while those of *C. ladaniferus* are borne singly. It is a very fine plant, flowering very freely for several weeks, and possessing a very great degree of hardiness. A spotted hybrid not now cultivated, I believe, is *C. Loretii*, a cross between *C. ladaniferus maculatus* and *C. montspeliensis*. A plant with spotted yellow flowers, sometimes known as *Cistus algarvensis*, is, of course, not a *Cistus* at all, but rather a *Helianthemum*, though Grosser, in the Monograph referred to above, adopts the genus *Halimium* of Dunal, and calls the plant *H. ocyroides*.

These spotted *Cistuses* are among the finest of ornamental flowering shrubs for garden decoration. They are very readily cultivated, and strike freely from cuttings. Though slightly tender, they have not been injured in the Cambridge Botanic Garden for some years past. *R. Irwin Lynch*.

THE ROSARY.

FEATURES OF THE PRESENT SEASON.

We have had very changeable weather in Mid-Sussex. A few hours have frequently been followed by chilly spells, whilst the amount of rain in June and July was greater than I remember in any previous year. A short time ago we had hailstones of a size I hesitate to mention. The storm was so local that one of our adjoining grounds scarcely felt it. In the other, the hail penetrated the blossoms like small bullets. Even Pea pods were traversed the whole of their length in some few instances.

It has occurred to me, in looking over the Roses, that, no matter what the season is like, a considerable number of varieties do well; they are what a friend called "all-season varieties," such, for example, as *Mme. Ravary*, *Mme. Abel Chatenay*, *Caroline Testout*, *Viscountess Folkestone*, *Kaiserine Augusta Victoria*, *Captain Hayward*, *Conrad F. Meyer*, *Dupuy Jamain*, *Fisher Holmes*, *Frau Karl Druschki*, *Mme. Antoine Mari*, *Georges Nabonnand*, *Gruss an Teplitz*, and *Killarney*. Unfortunately, there are several varieties of very little service except in favourable seasons.

I do not call to memory any season when such climbers as *Crimson Rambler*, *Blush Rambler*, *Dorothy Perkins*, and the many beautiful hybrid *Wichuraianas* have been more universally good. Mistakes in association of varieties are still far too frequent, such, for example, as placing *Dorothy Perkins* against a pale-red brick wall, or *Crimson Rambler* against a dark-coloured one.

In one instance a plant of *Dorothy Perkins* climbs over a light-coloured verandah on the next house to one built of pale red bricks. In another instance, a long row or hedge of drooping varieties is marred by the comparatively upright growth of *Blush* and *Philadelphia Ramblers*, with a few similar-habited varieties interspersed among those of very pendant character. I cannot help thinking that, grand

as the present effect is, it could have been improved if the same habit of growth had been maintained in all the plants. These are merely a few impressions that have struck me more forcibly since the advent of so many good climbers; but the same idea applies to beds of Roses, and it would be well to pay a little more attention to the style of growth when planting.

The stocks were never more promising, and the frequent showers have, at any rate, been very welcome to the budders, keeping the sap nicely active. At the time of writing (August 4), we have scarcely touched a standard stock, so we are greatly behind. However, the showers have kept the shoulders growing, and, in conjunction with shortening them when they first reached 18 inches or so, have caused the base of the shoulder to swell in a pleasing manner. We think this a better plan than to bud upon the shoulder as soon as it is large enough. In the latter case the Rose bud is frequently overgrown by the whole season's swelling.

Now the first crop of flowers from the Teas and their hybrids is passed, the plants are breaking into growth in a very promising manner. Perhaps I should not have written "is passed," for



[Photograph by Irwin Lynch.]

FIG. 45.—*CISTUS PURPUREUS* IN THE CAMBRIDGE BOTANIC GARDEN.

when does that occur with these beautiful sections, between mid-June and the advent of frost?

SPORTS FROM DOROTHY PERKINS.

THIS grand climber has produced several very beautiful sports. I should like to know if any reader has noticed the tendency of the sports to revert to the normal variety. I have *White Dorothy*, with a flower-truss having in the centre blooms of pure *Dorothy Perkins*. In another case, where a large number of buds has been worked, there is one plant at present that is unmistakably *Dorothy Perkins*. Now, in working some 800 of these, with the stocks following one another, it is quite inconceivable that one particular bud should have come from any variety other than *White Dorothy*. A very promising sport which appeared here some three years ago has a piece of the original variety in the centre of a truss, and the growth from one eye upon a standard has reverted similar to *White Dorothy*. Both sports from *Heinrich Schultheis*, namely, *Merrie England* and *Mrs. Harkness*, sometimes revert, and the two sports from *Comtesse d'Oxford*, namely, *Pride of Reigate* and *Pride of Waltham*, have reverted, whilst the sports themselves have appeared simultaneously upon the same plant. *A. P.*

LARGE-LEAVED ANTHURIUMS.

IN the days when fine foliated stove plants were more popular than they are at the present time, the advent of a decided novelty was sure to attract a good deal of attention. This happened particularly in the case of *Anthurium Veitchii*, which still remains one of the grandest of all foliage plants to be seen in the stoves.

It was discovered and introduced by *Gustave Wallis*, when travelling in New Grenada for Messrs. Veitch, from 1872 to 1874. When distributing the plant in 1878 Messrs. Veitch described it as a very handsome Aroid of striking aspect, and this must certainly be regarded as a very modest estimate of the plant.

The leaves, which are supported on stout, upright stalks, are from 3 feet to 5 feet in length, and 1 foot to 1½ feet in width. A striking feature is furnished by the principal veins, which diverge from the midrib. They are arched in shape and deeply sunk, thus giving a waved appearance to the whole leaf. This character is still further enhanced by the deep, glossy green colour and metallic lustre, particularly when the leaf first ex-

pands. When this *Anthurium* was first distributed plants were sold at three guineas each and upwards, and, what is more, large numbers were disposed of, though nowadays such a price would be almost prohibitive.

Another very striking *Anthurium* sent home by the same collector, and distributed at the same time is *A. Waroquanum*, whose leaves in good examples attain a length of 2 feet to 3 feet. They are broadest at the base, and come gradually to a point. In colour they are of a rich deep green with a velvety lustre, while the midrib and veins are of a lighter tint.

Anthurium crystallinum, a native of Colombia, is an older plant than those mentioned previously and the leaves, though large, do not attain the same size. Still they are so exceedingly beautiful that this species must be regarded as one of the choicest of the entire genus. The blade of the leaf is heart-shaped, and of a rich, bright velvety green, while the course of the midrib and principal veins is marked with silvery bands. The young leaves are of a striking purplish tint. A good deal of variation is to be found in the markings of the leaves of *A. crystallinum*, some being in this respect decidedly superior to others. The finest form is sometimes met with under the varietal name of *magnificum*. There is

also a well-marked variety known as *A. crystallum illustre*, in which the leaves are variegated in various ways with creamy white.

For their successful culture the Anthuriums above mentioned need a compost of an open, fibrous nature, effective drainage, and ample supplies of water at all seasons, but especially when the plants are growing freely. A stove temperature, a liberal amount of atmospheric moisture, and shading from the sun are also essential.

In none of these Anthuriums are the flowers at all showy. A hybrid between *A. Veitchii* and *A. Andreanum*, known as *A. mortfontanense*, has large, crimson spathes, but from a foliage point of view it is not to be compared with *A. Veitchii* itself.

There are many other large-leaved Anthuriums, and numerous hybrids have been recorded, but those above named are not only the best, but practically the only sorts in general cultivation. The flowering kinds, represented by *A. Andreanum* and *A. Scherzerianum*, with their varieties and hybrids, are more popular than those that produce ornamental foliage. *W.*

The Week's Work.

PLANTS UNDER GLASS.

By JOHN DONOGHUE, Gardener to JOSEPH PICKERSGILL, Esq., Bardon Hill, Weetwood, Yorkshire.

Dieffenbachia.—This useful stove Aroid is a very decorative plant, and, although it succeeds best in a stove temperature, it will thrive well in an intermediate house. Propagation may be effected at any season of the year. Cuttings inserted in small pots will soon form roots, but if a considerable number of plants is required, the quickest method of propagation is by division of the old stem; each piece should contain one or two eyes. They must be placed in well-drained, shallow pans or pots, filled with sandy material, and plunged into bottom heat. As soon as growth commences, pot them singly into small pots. Plants of a useful decorative size may be cultivated in pots 6 inches in diameter. Young stock is preferable to cut-back plants, therefore, where specimens are desired, several plants should be potted together and repotted into pots or pans as they develop in growth. When the pots are well filled with roots, weak liquid manure may be given alternatively with clear water.

Heliconia.—The culture of this plant is similar to the *Dieffenbachia*.

Bougainvillea.—Plants which have completed their season of flowering should be hardened off out-of-doors. They should remain outside as long as the state of the weather will permit. Although *Bougainvillea*s will stand a few degrees of frost during the resting period, it is safer to place them in a cool greenhouse where frost is excluded during the winter.

Clerodendron fallax.—Plants of this species may now be afforded more exposure to sunshine, and a free circulation of air should be maintained on all favourable occasions. Syringing may be dispensed with altogether, but an occasional damping of the stages on bright days is necessary. A temperature of about 60° during the flowering season will suffice. Extreme care must be exercised when applying water, as excessive moisture at this stage will seriously affect the development of the flowers. Afford the roots occasional top-dressings.

Begonia Gloire de Lorraine.—The latest batch of plants should be repotted into their flowering pots without further delay. The compost should consist of the best fibrous loam and peat, with sand, charcoal, and a small quantity of well-decayed sheep manure. The roots should be treated with care when potting, as the potting compost at this stage, being of a lumpy nature, is liable to cause them injury. These *Begonia*s grow rapidly during August and September, and, if in good health, they will make luxuriant foliage. An occasional watering with soot-water helps to impart a dark-green colour to the leaves. The atmosphere should be constantly charged with moisture. Continue to shade the plants during hot weather, and damp both the stages and paths occasionally with weak farm-yard manure.

THE HARDY FRUIT GARDEN.

By A. R. SEARLE, Gardener to the Marquis of Northampton, Castle Ashby, Northamptonshire.

Apples.—These fruits are very scarce in this district, but some of the freer fruiting varieties, such as Keswick Codlin, Lane's Prince Albert, Lord Suffield, Lord Grosvenor, and Schoolmaster are carrying fair crops. If any thinning is necessary, this should be done now for the last time; these surplus fruits may be used for making tarts and puddings. Occasional waterings with liquid manure will benefit the trees and assist the fruits in developing to a large size. Early dessert varieties, such as Irish Peach, Early Harvest, Mr. Gladstone, Beauty of Bath, Langley Pippin, and Lady Sudeley, should have nets placed over them to protect the fruits from birds. American blight is developing on some of the old trees; measures should be taken at once to combat this pest, dressing the infested parts with methylated spirit or with the mixture recommended in a former Calendar.

Figs.—The crop of Figs out-of-doors is much better than last year. The fruits are swelling rapidly, and should now be finally thinned to three or four on each shoot. Allow the leading growths to extend where space permits, as these, when well ripened, will produce the finest fruits next season. Fasten the shoots securely to the wall, and avoid shading any of the fruits when doing this. Train in those growths which have short joints and are firm in texture, as these mature the best and are consequently the most fruitful. Cut out all weak and useless growths, so as to avoid overcrowding of the shoots, it being very important that the fruiting wood matures properly. Expose the fruits fully to the rays of the sun, as this is essential to good flavour, and do not gather them before they are quite ripe. Continue to apply liquid manure to old trees carrying heavy crops, and renew the mulching material if necessary. Discontinue the application of manurial stimulants immediately the fruits show signs of ripening, and afford less moisture, otherwise the fruits will be liable to splitting. Ripe fruits must be protected from birds and wasps, either tying them in muslin bags or covering the trees with wasp-proof netting.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Surrey.

Cattleya.—When such plants as *Cattleya gigas*, *C. Rex*, *C. Dowiana*, and its variety *aurea*, also the hybrid *C. Hardyana*, pass out of flower, they should be kept on the dry side for a few weeks, and be exposed to more light and air than at any other time. The compost should not be kept very wet, otherwise the roots will not grow from the newly-made pseudo-bulbs in the free manner necessary to recover the vigour of the plants after flowering. Should any of these plants need repotting, commence the operation immediately young roots begin to develop. Use the best *Osmunda* and *Polypodium*-fibres in equal parts, with plenty of small crocks intermixed. Afford plenty of drainage materials. Pot each plant firmly, and see that the rhizome of the plant is kept just on a level with the rim of the pot. Pack the compost well up under the pseudo-bulbs, gradually sloping it down towards the pot-rim, so that, when watering, the moisture will settle more to the sides than the centre. When repotted, the plants should be placed at the cooler end of the *Cattleya* or intermediate house, where they will be exposed to the light and air. Until the plants are re-established, only sufficient moisture is necessary to prevent the roots perishing. With copious waterings after flowering, plants are apt to start away into growth instead of taking the long rest that is necessary. *C. speciosissima* should be treated likewise, although the plant will stand more drying during the resting period than any of the others mentioned. This plant thrives best when suspended near to the roof-glass in the *Cattleya* house. Plants of *C. Gaskelliana* now commencing to root may also be repotted, care being taken to cause only the least possible disturbance to the old roots so as not to affect the flower-buds now beginning to show themselves.

Lalia.—*L. purpurata*, *L. tenebrosa*, *L. cinabarina*, and many of their hybrids should now be examined in order to see if more root-room is required. By this time their new growths will have increased a few

inches, and they will soon produce roots. When giving plants larger pots, cut away old and useless back pseudo-bulbs. If two or three are left behind each leading growth, it will be found sufficient. Enough space should be allowed in the receptacle for at least two seasons' growth. Old plants which require to be broken up should now receive attention. All worn-out pseudo-bulbs and dead roots should be cut away, the decayed compost removed, and the pieces potted separately into pots as small as it is possible to get them in, so that, when they again become well rooted, they may easily be shifted into larger ones.

Stanhopea.—The *Stanhopea*s are suspended well up to the roof-glass in the intermediate house. Several of the earliest-flowering varieties are now pushing their spikes, and where a fairly representative collection is grown, there will be blooms on some for several months to come. Among the best are *S. eburnea*, *S. insignis*, *S. Wardii*, *S. Rodigasiana*, *S. Mastersii*, *S. tigrina*, *S. florida*, *S. platyceras*, *S. Lowii*, *S. saccata*, *S. Amesiana*, *S. Devoniensis*, *S. oculata*, and *S. Bucephalus*. These should be supplied abundantly with water at this season, but when the flowers begin to open, being very fugacious, care must be taken to avoid wetting them. When watering plants in flower, lay them carefully on their sides, water them thoroughly, and, before suspending again, allow them sufficient time to drain properly. For the present, keep the plants well shaded from the sun, but when growth is completed and the flowering season over, they may be gradually exposed to more light and air, and the amount of water at the root lessened by degrees.

Vanda.—At this season *Vandas* of the *V. tricolor* and *V. suavis* section often lose a number of their lowermost leaves. The East Indian house is too warm for them. What they need is a well and evenly-balanced intermediate temperature, a constantly-moist atmosphere, and sufficient water at the root to keep the *Sphagnum*-moss in a fresh and growing condition. Afford the plants plenty of fresh air, and shade them from sunshine.

THE FLOWER GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Hertfordshire.

Shrubs at present in flower.—There are few, if any, flowering shrubs more worthy of extensive cultivation than the better forms of *Buddleia variabilis*, with their large trusses of handsome flowers, varying in colour from pale lavender to deep purple. At Aldenham we have raised many plants from seed obtained from China two years ago. These seedlings are now good flowering specimens, and are making a grand display, both in the shrubberies and at the back of the hardy flower borders. Two of the best varieties in commerce are those known as *magnifica* and *Veitchii*. The flowers are very attractive to coloured butterflies. Of *Spiræa*s now in flower, the varieties of *Spiræa japonica* make neat bushes for cultivation in various positions in the flower garden, and are very free-flowering. The variety *Anthony Waterer*, when obtained true, is valued for its rich, red flowers. *S. j. Bulmalda* is not so rich or bright in colour; the variety *ruberrima* has flat heads of dark red flowers. Other *Spiræa*s at present in flower are *S. Douglasii*, an excellent plant for the woodlands, producing masses of pink flowers, and *S. Aitchisonii*, with elegant foliage and white flowers. Among the *Broom* family, *Cytisus nigricans* is flowering very freely, and it makes a dense, rotund bush. *C. leucanthus* or *schijpkansis* is a dwarf shrub, with pale flowers, and forms a useful plant for the rockery or front of the shrubbery. *Genista tinctoria*, the "Dyer's Greenweed," is also conspicuous. *Ceanothus Gloire de Versailles* is a grand subject for training against a wall or similar support.

Variegated shrubs and trees.—At this season of the year, when flowering shrubs are few, the value of variegated trees and shrubs is especially obvious. Though, in most cases, the plants are poor growers, there are many exceptions, and the following may be recommended as free growers of the deciduous section:—*Acer Negundo-variegatum*, *A. N. versicolor*, and the white and yellow variegated forms of *Aralia chinensis*. The two variegated forms of the Spanish Chestnut make handsome trees, as also do the several variegated forms of *Cornus alba*, such as *Spæthii* and

variegata, and these will thrive almost anywhere. The coloured forms of *Cornus Mas*, the Cornelian Cherry, although not so free as the species already mentioned, make interesting shrubs. *Kerria japonica* variegata, the two variegated varieties of *Philadelphus coronarius*, the *Sambucus nigra argentea* variegata are all of free growth. Of evergreen, there may be mentioned *Aucubus*, *Hollies*, *Box*, *Aristotelia Macqui* variegata, *Eleanus glabra* variegata, *Euonymus* in variety, *Tree Ivies*, *Osmanthus*, and *Vincas*.

Montbretia.—*Montbretias* are now developing their flower-spikes. The plants should therefore be examined, and, if necessary, supports given in the neatest manner possible. The newest hybrids of these are distinct improvements on the old *M. crocosmiflora*, producing flowers on large, arching sprays, while many of the individual blooms are 3 inches in diameter. If the ground is dry, afford a good soaking of water. The flowers are extremely useful for house and table decoration, and the spikes remain in excellent condition for several days in a cut state.

General work.—The seedlings from the late sowing of *Mignonette* should be thinned out, allowing the plants ample room to develop. Remove any batches of annuals that pass out of flower or become unsightly. Continue to tie up and attend to plants on the borders. Keep the hoe at work amongst the transplanted subjects intended for spring bedding, and induce these to form neat, bushy plants. Syringe all *Roses* that require it, whether for fly or mildew. Apply dustings of artificial manure during showery weather to border *Chrysanthemums* and *Dahlias*.

THE KITCHEN GARDEN.

By JOHN DUNN, Kitchen Garden Foreman,
Royal Gardens, Windsor.

Winter Onions.—The August sowing of Onion seed should be made on some day between the 15th and 25th, according to the district. Select a loamy soil which was manured liberally for the previous crop rather than soil which has to be freshly manured. The ground should be dug deeply and the soil broken as finely as possible, after which it may be allowed to remain for a few days until it is dry enough for treading and raking. The seeds should be sown in drills drawn at 15 inches apart, and they should be covered only very lightly with fine soil. Excellent varieties for present sowing are *Giant Lemon Rocca*, *Ailsa Craig* and *Long Keeper*. These varieties stand through the winter well, and the bulbs grow to a large size.

Shallots and Garlic.—Seedling Shallots and Garlic will now be ready for lifting. They should be dried thoroughly, and may afterwards be bunched and suspended in an open shed until they are required for use.

Tomatos.—Plants intended for fruiting in winter will now be ready for potting into the final pots. The compost for use at this potting should be composed of loam three parts, and leaf-mould one part. Make the soil moderately firm about the roots, and place the plants in a cool house, where plenty of air can be admitted both by night and day until a crop of fruits is set.

Sweet Basil.—Make a sowing of *Sweet Basil* for use in winter. This herb is most difficult to cultivate in winter, and it is seldom seen in the markets during that period. The best method of culture is to prick off the young seedlings into 6-inch pots, putting four or five seedlings in a pot, and placing the pots in a cool pit until autumn, when they should be removed to a forcing pit, having an atmospheric temperature of 60°, arranging them on a shelf exposed to the light. Another sowing may be made in pots about the end of the present month for a supply in spring.

Herbs.—Herbs for drying should be cut as soon as possible and placed in a dry, airy shed until they are ready for bunching.

Spinach.—Make another sowing of *Spinach*, and, directly the seedlings are large enough thin them out to distances of 6 inches apart. The flat hoe should be kept frequently at work amongst the plants in order to promote a free growth.

Leeks.—Plants that were put into trenches early in the summer should now be given a thorough soaking of liquid manure. The trenches

may be filled to the ground level as soon as the plants are large enough. Later plant- may still be planted for use in winter and early spring. Before removing them from the seed beds, the beds should be given a thorough watering, and every care taken to prevent breaking the roots during the process of lifting.

Celery.—Proceed with the earthing-up of the earliest plantations of *Celery* when the foliage is perfectly dry. It is a good plan to give the beds a thorough soaking with weak liquid manure a day or two previous to earthing them up. Examine each plant, and remove all side shoots and deformed leaves before adding the soil. During the process of earthing-up the plants should be tied loosely with matting, and every care taken to prevent the soil getting between the leaves. The operation should be carried out at frequent intervals rather than by adding a large quantity of soil at one time. The soil should be broken up very finely, and it should be placed carefully round each plant with the hand.

Celeriac.—Plants of *Celeriac* require frequent waterings with weak liquid manure between the rows, in order to induce the development of large roots.

FRUITS UNDER GLASS.

By B. GOODACRE, Gardener to Sir ERNEST CASSELL,
G.C.B., Moulton Paddocks, Newmarket.

The viney.—Where *Grapes* are fully matured and in greater quantity than the demand of the establishment, care must be taken to keep the berries in a good, firm condition. Dryness of the atmosphere is one of the chief requisites, therefore, when the weather permits, admit plenty of fresh air during the day, and also at night-time. On dull, damp days, a little fire-heat will be necessary to keep the atmosphere in circulation, but care must be taken to see that the border near to the hot-water pipes does not become dry. Vines still swelling their fruits should be encouraged to ripen them, for all *Grapes* should now be showing some signs of colour. Most varieties require fully six weeks after commencing to colour to reach a stage when they are fit for exhibition, and another fortnight to be at their best for the dessert table. Take every care to keep the houses charged with moisture. Use the syringe freely, and, if red spider is noticed, employ means to check it. Choose a clear, warm evening after the sun has lost its power, and give the vines a drenching overhead with clear, soft water, wetting every part of the foliage both above and below. Allow time, if possible, for the foliage to become dry the same evening, and, if necessary, to ensure this, permit a little extra heat from the hot-water pipes, with a little more top ventilation. If this syringing is carefully done, the berries will not be in the least marked, and it is the best way to rid a viney of this troublesome pest. Many persons prefer syringing with an insecticide, but this is a long and tedious task, and it generally results in torn and scalded leaves, as well as marked berries. Any vines which are still growing should be pinched regularly. Some varieties, such as *Madresfield Court*, *Mrs. Pince*, and *Gros Colman*, are benefited by allowing a little extra growth to remain as the berries commence to colour, this having a tendency to prevent the fruits from splitting. At the same time, do not allow the growths to become so dense as to exclude the light, for all three of these varieties are sun-lovers, and rarely finish their bunches satisfactorily if subjected to shade.

Cucumbers.—Plants in full bearing require to be fed freely. Any useless or decayed growths should be removed immediately to make room for young, fruitful wood. Continue to stop and pinch the laterals. Keep the atmosphere well charged with moisture. It is advisable to shade *Cucumbers* in frames with a few *Spruce* branches during the hottest part of the day. Close the frames early in the afternoon, so as to store enough sun-heat to suffice, if possible, for the night. Cut the fruits directly they are suitable; the small ones will be useful for pickling purposes. If any signs of mildew are seen, sulphur the frame thoroughly, and either admit a little ventilation last thing at night, or syringe the plants well with clear water on the following morning. The present is a good time to sow seeds for the winter batch of *Cucumbers*.

THE APIARY.

By CHLORIS.

Foul brood.—Since the season of 1910 has not, thus far, proved very favourable to the collecting of nectar, it will be well for the beekeeper to keep a watchful eye on his stocks, for the bees in many parts are barely able to gather sufficient for the daily wants of the hives. The beginner may be at a loss to understand why such a warning is necessary, especially during the summer months, when there is such a seeming abundance of food. When he has had more experience, he will find that weak and badly-fed colonies are more liable to disease than those which are strong and well nourished. Further, these stocks, when attacked by disease, have little desire or strength to defend their stores; they work, if they do at all, in a languid manner, there being at the entrance an absence of bustle which marks the energy of healthy colonies. Earlier in the season there would be no swarming, but a very marked dwindling of the number of bees on the wing on fine, working days. When the bees have little strength to defend their hives, other bees commence to rob them, and thus the diseased hive becomes the centre of an epidemic disease. Not only do bees thus help to spread the contagion, but the ignorant beekeeper is himself a very active agent, for, if he handles diseased and healthy colonies indiscriminately, without taking great care to disinfect himself and all that he has handled, he may spread the disease throughout the apiary. One more warning is necessary. Spores of the disease remain in the cells which have contained foul brood, and the workers store honey or pollen in them, thus spreading the disease, for the nurse bees feed the larvæ with this contaminated food. Much trouble is often caused by leaving frames from diseased hives in exposed places, exposing the healthy bees to contamination.

Symptoms of foul brood.—Weakness of the stock is generally the first symptom; lack of energy, and crawling about the alighting board, without any seeming desire to work and fly, are all indications of foul brood in the hive. On opening the hive and removing the quilts, during the early stage of the complaint, there will be noticed a slightly bad odour, a great contrast with the sweet smell which rises from a healthy stock. When the disease has reached an advanced stage, the smell will be easily noticed on reaching the hive, without opening it. On proceeding to examine the brood chamber, the cappings of the cells containing dead or diseased larvæ will be sunken. Those containing healthy brood never shrink, being slightly convex, and always whole; but the diseased cell has often a perforation. On removing the capping, the larvæ will be found shrunken (not plump and pearly white, as brood free from disease appears), flabby, quite horizontal, and a pale straw colour, changing to a deep brown when decomposition has commenced. Later, it will be sticky, very foul smelling, and when a match is inserted it adheres to the wood, and will be found very elastic. Some beekeepers have confused foul brood with chilled brood, but it is easily distinguished when it is remembered that chilled brood first turns grey, and then almost black; but, in foul brood, the brood is first yellow and then coffee coloured.

Remedies and prevention.—Make all hives perfectly watertight; let them be well ventilated, and place them on a suitable site, where the air can circulate easily about them, free from the drip of trees, and having shelter from cold winds. Let the colonies be headed by a young and vigorous queen, which will keep each stock well filled with brood, and let them have a good supply of the wholesome food, thus keeping up the vitality of the inmates to enable them to resist the disease. Disinfecting should be done by spraying Calvert's No. 5 carbolic (two parts of water to one of carbolic) on all that has been handled, and for washing the hands. If the colony is weak, destroy it and the frames, &c., by burning, then wash the whole of the hive with boiling water and carbolic soap. When dry, paint all over, inside and outside, with a strong solution of Calvert's No. 5 carbolic. If the colony is strong, shake off the bees into a straw skep, feed them on good syrup, and confine them for at least 48 hours, previous to returning the bees to a clean hive fitted up with full sheets of foundation. Use about five frames, wrap the hive up warmly, and destroy the old skep.

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Special Notice to Correspondents.—The Editors do not undertake to pay for any contributions or illustrations, or to return unsolicited communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

Letters for Publication, as well as specimens of plants for naming, should be addressed to the EDITORS, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Local News.—Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editors to see.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, AUGUST 16—
Roy. Hort. Soc. Coms. meet.

WEDNESDAY, AUGUST 17—
Shropshire Hort. Soc. Exh. at Shrewsbury (2 days).

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich—62.0°.

ACTUAL TEMPERATURES:—
LONDON.—Wednesday, August 10 (6 P.M.): Max. 72°; Min. 55°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London—Thursday, August 11 (10 A.M.): Bar. 30.2; Temp. 64°; Weather—Bright sunshine.

PROVINCES.—Wednesday, August 10; Max. 68° Essex; Min. 55° Scotland N.E.

SALES FOR THE ENSUING WEEK.

MONDAY—
Great Trade Sale of Dutch Bulbs, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.
Special Sale, *Lilium Harrisii*, Roman Hyacinths, and numerous other Bulbs, by Protheroe & Morris, at 5.

WEDNESDAY—
Trade Sale of Dutch Bulbs, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.

THURSDAY—
Trade Sale of Dutch Bulbs, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.

American Weeds. The ceaseless vigilance required to keep garden and field free from weeds is understood by no one but the cultivator who is confronted year by year with this difficult task. Nor do the uninitiated understand precisely how important is this branch of the work of land cultivation.

In their invasion of cultivated land, the weeds have Nature on their side, and he who would stem the tide of the invasion must learn something of the arts and wiles which Nature has given to weeds to help them in their attack. Of the numberless regiments of weeds, some working unseen, with deliberate approach underground, gain access, like sappers and miners, to the citadel of farm or garden. In these ranks are the plants with underground rhizomes or root-stocks, such as Couch grass and *Convolvulus*. The bud at each inter-node of plants like Couch is a potential plant. Cut the rhizome in two and two plants are produced. Thus by all but the most thorough methods of extermination the enemy is multiplied instead of being destroyed. Multitudes of other weeds effect their invasions through the air, descending on cultivated ground, as parachutes or aeroplanes. Though each of these delivers its attack singly, yet they come without much intermission through the summer months. They are slight unobtrusive and unobserved, sow themselves and, once established, are difficult of

dislodgment. To this class belong the weeds with winged seeds and fruits, Sorrel, Dock, Thistles, Dandelion, and the like.

Other weeds again press into service for purposes of invasion the animals of the farm. By the hooks and bristles which cover the seeds or fruits they attach themselves to the coats of cattle and the wool of sheep, to the hairs of dogs and the clothes of men, to the sacks and implements which are carried about from one part of the farm to another. Among the plants which thus make their attack under cover are the Wild Oat, Brome Grass, the Corn Cockle, Agrimony, Wild Carrot, Wild Comfrey, and many other species.

The diversity of their modes of advance is equalled only by the powers of endurance possessed by the seeds and the prolific production of seeds. A single plant of Purslane may bear a million seeds, and the seeds of many plants, such as Dock, Evening Primrose, and others, may lie dormant in the ground for upwards of 30 years and still be capable of growth.

The smaller animals of the farm contribute, like the larger animals, to the sowing of weed-seed. Birds carry large numbers attached to feathers and feet, and even ants may be responsible for the carriage of minute seeds to very considerable distances.

But it is not only with the resourceful arts of Nature that the good cultivator has to contend. His work is rendered harder by the unwatchful husbandman who is his neighbour, and on whose land, whilst he sleeps, the enemy Nature sows tares. Hence it is wise for the vigilant man to bring home to everyone the insidious character of the common enemy and to spread knowledge of methods of weed-eradication. Much might be done in rural districts by teaching scholars the ways and habits of weeds. No subject could be rendered more fascinating, and unfortunately there is none which can be more readily illustrated by actual, living specimens. Such a course of instruction, including the identification of seeds and fruits, their modes of distribution, length of life and ways of vegetative propagation of weeds and a hundred other simple yet fascinating facts, would not only serve as a splendid introduction to the study of natural history, but would also bring home to all the reality of the damage which these invaders inflict upon garden and field crops.

The agriculturists of this country are, as a general rule, alive to the value of close cultivation, and no English horticulturist worthy of the name tolerates weeds in the cultivated land under his control. Nevertheless, for the reason already given, namely that one neglectful person may do harm not only to his own land but also to that of his neighbours, it is necessary to point out from time to time the necessity for systematic extirpation of weeds. The urgency of this need is the greater in newer countries like America, where the cultivated area is greater, the yield smaller, and the farming community as a whole less skilled than in Britain. A visit to Canada and the United States demonstrates that the need for dissemination of information about weeds is even more urgent than in this country. In the States and in Canada, the farms are generally large: labour is scarce and double as costly as in this country. Hence it is not surprising that the land and the crops it bears

suffer from weeds. When the visitor expresses surprise at the state of affairs common in many parts of Canada and the United States, he is met with the answer that systematic cultivation of the land, with the object of keeping down weeds, is impossible owing to the high cost of labour.

Nevertheless, American experts are fully alive to the fact that, in the long run, the farmer is likely to pay very dearly for this neglect. Thus Mr. W. J. Beal, botanist to the Michigan State Agricultural College Experiment Station, has issued a timely warning in Bulletin No 260. In the bulletin, which contains an admirable account of the seeds of Michigan farm weeds, he points out that it has been demonstrated that the annual cost of cleaning a weedy farm of 100 acres in Ontario was found to be 75 dollars, that is about three shillings per acre; whereas it is indisputable that the increased yield from the cleaned farm would much more than cover the outlay.

It is a fact of peculiar interest that more than 50 per cent. of the common weeds of the State of Michigan are of European origin, the exact number being 124 out of a total of 250. Of the remainder many are of other alien origin. So that just as the population of the North American Continent is composed of good Americans who but yesterday were emigrants from all parts of the earth, and particularly from Europe; so the weed population is mostly of foreign origin, and, having come to the new country, has found it so congenial that it has naturalised itself without delay and is spreading as fast as the Saxons and Teutons are spreading over the broad acres of the continent.

The damage done by weeds is far reaching. Whereas all compete with cultivated plants for food, water, and space, many have more subtle ways of making their obnoxious presence felt. Some, like Burdock, cause depreciation in the value of wool; others, like the Wild Onion, affect dairy produce adversely. Pennycress mars the flavour of the meat of cattle which have fed on it, and the Common Hemlock is actually poisonous.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the committees of this Society will take place on Tuesday, the 16th inst., in the Society's Hall, Vincent Square, Westminster. In the afternoon Mr. A. C. SMITH will deliver a lecture on "The Lesser Known Grapes."

THE SCHRÖDER MEMORIAL.—The Rev. W. WILKS, M.A., secretary of the Royal Horticultural Society, writes us as follows:—"The Council of the Royal Horticultural Society have established in grateful memory of the late Baron SCHRÖDER a perpetual pensionership under the rules and regulations of the Gardeners' Royal Benevolent Institution, and have suggested to the committee of the Benevolent that it would be very pleasing to the Council if the widow of the late Mr. WILDSMITH, head gardener to Lord EVERSLEY at Heckfield, were appointed the first Schröder pensioner. Mr. WILDSMITH rendered great and willing help to the Society in the difficult days of the Society's leaving South Kensington. The Society has to-day (August 9) been informed that Mrs WILDSMITH has been duly appointed."

ROYAL METEOROLOGICAL SOCIETY.—We are informed that His Majesty the KING has graciously consented to become the patron of the Royal Meteorological Society.

THE "BARR" MEMORIAL AND THE GARDENERS' ORPHAN FUND.—We are informed that the PETER BARR Memorial Fund is progressing steadily, but the executive committee are anxious that all who desire to honour the memory of the late Mr. PETER BARR should have ample opportunity of doing so. The object is to provide a sufficient sum of money to maintain one child through the medium of the Royal Gardeners' Orphan Fund, and to provide a medal to be awarded annually for special work in connection with Daffodils. Subscriptions should be sent to Mr. H. B. May, Chingford, the treasurer of the fund. Full particulars may be obtained from Mr. Wm. Marshall, V.M.H., Bexley (chairman), or Mr. Chas. H. Curtis, Adelaide Road,

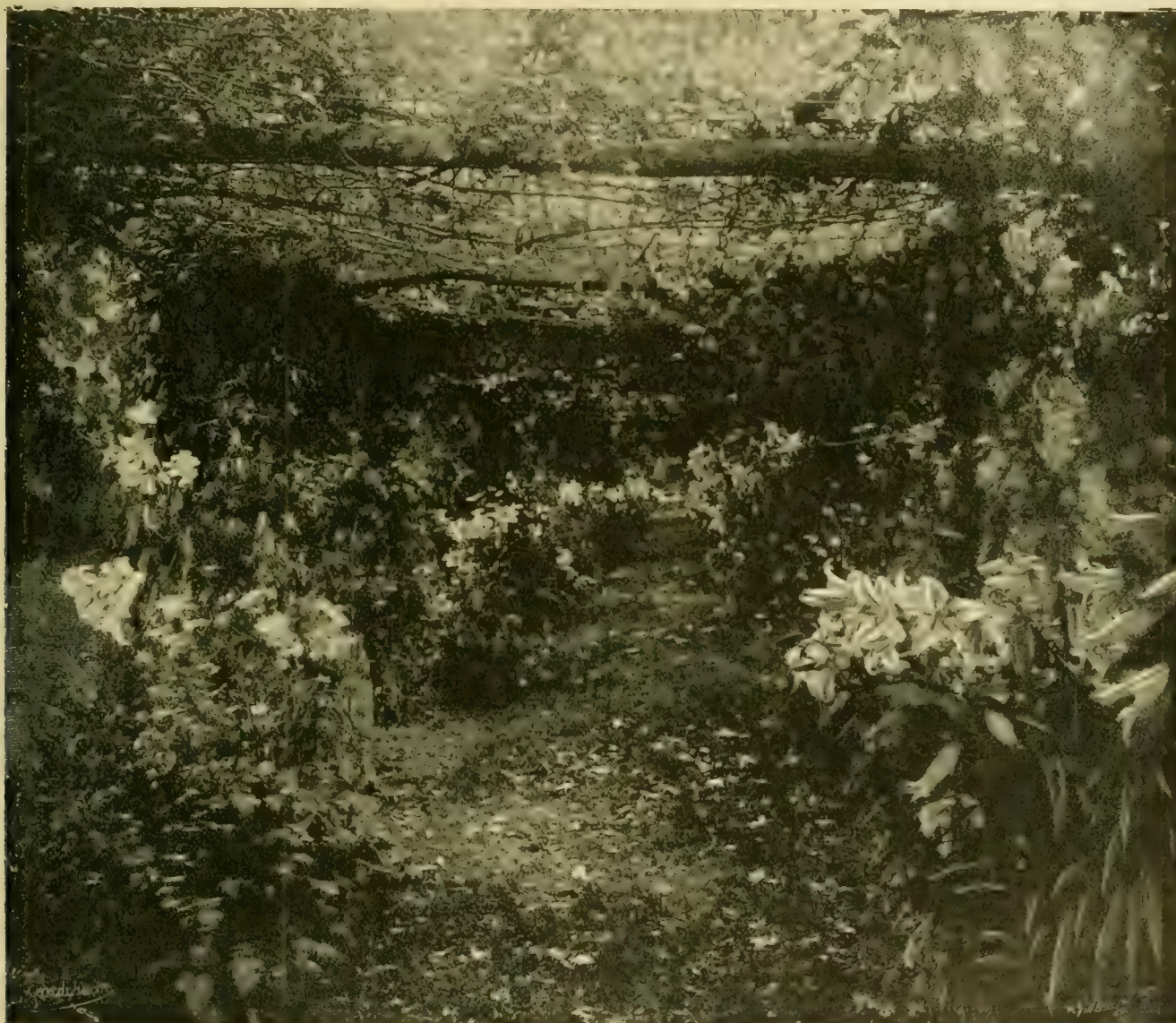
& Simpson, Wheadon & Sons, J. S. Brunton, W. A. Watts, T. H. Lincoln, T. Kime, J. Bunting, J. H. Kerston, Otto Mann, V. van Zanten, P. van der Neer, Van Meerbeck & Co., W. H. Page, Van Hartman, Van der Eest, H. de Graaff & Sons, Chas. Smith & Sons, Arnold Weiss, and Protheroe & Morris. We hope that those who have not yet contributed to these worthy objects will communicate with Mr. Henry B. May.

"THE BOTANICAL MAGAZINE."—The issue for August contains plates and particulars of the following plants:—

BULBOPHYLLUM VIRESCENS, tab. 8327.—This plant formed the Supplementary Illustration in *Gardeners' Chronicle* of October 13, 1906. The

PTEROSTYRAX HISPIDUM, tab. 8329. *Pterostyrax* is nearly allied to *Halesia*. The species under notice was described by the late Dr. MASTERS as *Halesia hispida* in '*Gardeners' Chronicle*, 1884, vol. xxii. The illustration is reproduced in fig. 47. The trees at Kew flower freely almost every year, and form striking objects in the garden in June. The species is hardy, but at the same time does best in favoured districts. The specimen which supplied the material for the *Botanical Magazine* plate is growing in Canon ELLACOMBE's garden at Bitton, near Bristol. Propagation is readily effected by means of seeds.

GAMOZYNE PULCHRA, tab. 8330.—A showy Aroid, with bright-red spathe, near to *Pipto-*



[Photograph by H. N. King.]

FIG. 46.—CLANDON PARK: PERGOLA WITH LILIAM AURATUM FLOWERING IN THE INTERIOR.

Brentford (hon. sec.). Those who have contributed to the fund since publication of the last list are Messrs. W. Robinson, H. Backhouse, J. Pope, Dorrien Smith, C. G. A. Nix, the Glamorgan Daffodil Society, Haage & Schmidt, Hurst & Son, Harvey Clarke, W. Welchman, Byvoet Brothers, Guldemonde & Sons, R. & G. Cuthbert, B. Ruys, E. Kerston, Vilmorin & Co., Robert Veitch, Bellis & Meek, G. Forbes, C. Lemeslie Adams, Ant. Roozen & Sons, J. H. Stroud, G. Monro, N. Naylor, Jas. Hunter, Lowe and Shawyer, Dobbie & Co., Mrs. Penton, W. Mauger, C. W. Cowan, Foster & Robins, G. Monro, Jun., Boyd Barrow, R. H. Beamish, W. H. Cranfield, W. Waemar, W. Goldring, Watkins

plant received a First-class Certificate at the Holland Park Show of that year. It is very nearly related to *B. Binnendijkii*, and is a native of the New Guinea region.

PATRINIA TRILOBA, tab. 8328.—A member of the Valerianaceæ, with bright-yellow flowers in terminal cymes, and with sharply-lobed, cordate leaves, with reddish margins. The species is a native of Japan, and differs from *P. gibbosa* in its larger flower, rather smaller and sharply-lobed leaves, and its leafy stem. It thrives in the rock-garden at Kew, flowering during July and August. A note on the species of *Patrinia* in cultivation, with an illustration of *P. palmata*, was given in *Gard. Chron.*, Oct. 9, 1909, p. 244.

spatha Ridleyi. The leaves are ornamental, and the plant forms an attractive subject on the small rockery in the Nepenthes house at Kew. The spathe is much brighter-red than that of *G. Burbridgei*, and the stamens also are red. The plant is found wild by a rocky stream on Gunong Pulai in Johor.

PSORALEA AFFINIS, tab. 8331.—This is an old garden plant, better known as *Psoralea pinnata*, and said to have been in cultivation since 1690. It forms a showy greenhouse subject, either as a pot plant, or planted in the border, where it grows to a height of 10 feet. Specimens in the temperate house at Kew flower each spring, and it is also used for the decoration of the conservatory

at Kew. In the Isles of Scilly, *Psoralea affinis* blooms in the open, and plants in Mr. T. A. DORMIEN SMITH'S garden at Tresco Abbey furnished the material for the *Botanical Magazine* illustration.

MR. W. J. TUTCHER.—Mr. S. T. DUNN has resigned the superintendency of the Botanical and Forestry Department at Hong Kong. He is succeeded by Mr. W. J. TUTCHER, who has been acting superintendent on many occasions. Mr. TUTCHER has served in Hong Kong for nearly 20 years, for he left the Royal Botanic Gardens, Kew, in September, 1891, to succeed Mr. WESTLAND.

BRITISH ASSOCIATION.—The Association will meet at Sheffield on 31st inst., forming the eightieth annual meeting, when Canon T. G. BONNEY, F.R.S., will deliver the presidential address. The section devoted to agriculture and plant life will be presided over by Mr. A. D. HALL, director of the Rothamsted Experimental Station of the Lawes Agricultural Trust, who will deal with the causes of the fertility of the soil. The *Times* states that there will also be papers on the effect of organisms other than bacteria on soil fertility, by Dr. E. J. RUSSELL, and Mr. W. B. HUTCHINSON. Some recent phases of the problem of nitrogen fixation by bacteria will be discussed by Professor BOTTOMLEY and Mr. JOHN GOLDING. Other papers will include:—"Scientific Breeding of Live Stock," Mr. K. J. J. MACKENZIE, of Cambridge; "Effect of Town Atmosphere on Vegetation," by Dr. CROWTHER, of Leeds; "A Bacterial Disease of Potatoes," by Mr. A. HOWE, of Armstrong College, Newcastle-on-Tyne; and "Costs of Danish Farming," by Mr. CHRISTOPHER TURNOUR. In Section K (Botany), Professor F. O. BOWER will read a paper on "Sand Dunes and Golf Links." Papers have also been promised by Professor BOWER (a) on "Two Synthetic Genera of Filicales," (b) "Note on *Ophioglossum palmatum*," by Dr. F. DARWIN, on "A New Method of Estimating the Opening of Stomata," by Mr. S. MAUGHAN, on "The Paths of Translocations of Sugars from Green Leaves," by Professor F. W. OLIVER, on "The Pollen Chambers of Fossil and Recent Seeds," by Mrs. THODAY, on "The Morphology of the Ovules in *Gnetum* and *Welwitschia*," by Dr. M. C. STOPES, on "Further Observations on the Fossil Flower," by Mr. HAROLD WAGER, on "Chromosome Reduction in the Hymenomyces," by Professor V. H. BLAKEMAN, on "The Sexuality of *Polystigma rubrum*," by Professor FARMER and Miss DIGBY, on "Telophases and Prophases in *Galtonia*," by Dr. LLOYD WILLIAMS, on "The Zoospores and Trumpet hyphae of the *Laminariaceae*," by Mr. WILSON, on "Plant Distribution in the Woods of North-east Kent," and by Mr. A. S. HORNE, on "The Absorption of Water by Leguminous Seeds."

FORESTRY.

FORESTRY AT HURSLEY PARK.

SIR GEORGE COOPER, Bart., acquired this estate less than 10 years ago, but he has greatly improved the property. The close attention that is being paid to the forestry department was apparent on the occasion of a recent visit of the southern section of the Royal English Arboricultural Society. For many years previous to 1904 very little or no planting had been done on the Hursley Estate, and the underwood, which is mostly Hazel, had long since ceased to pay. Sir George Cooper, therefore, decided to adopt a system of clear felling and replanting. This policy

was necessary, as the woods, prior to this date, had been ruthlessly thinned from the time they reached even pole size. Afterwards, as they began to grow into timber, severer thinnings were practised, the cleanest and best trees being cut out. As a result, in a great many cases, the crop consisted of a few bushy, branching trees per acre. The present plan is to clear, cut, and replant 30 to 35 acres each year.

A plantation comprising 13 acres was planted in 1904-5 with Beech, Ash, Oak, and Sycamore, 6 feet apart, and filled up to 3 feet with Scots Pine and Larch. A few Douglas Firs were introduced in 1905-6, and, it is now considered advisable to cut these out, as, having grown so rapidly, they threaten to hinder the surrounding trees. This plantation gives an idea of the futility of forming indiscriminate mixtures with this species. In 1909 many of the Scots Fir were killed by a root fungus. The diseased plants were grubbed and burnt, and the blanks made good with Sycamore and Beech.

Another portion, called the Ratlake plantation, some 22 acres in extent, was also planted in 1904-05 with similar trees to the 13 acres already referred to. The Scots Firs in this plantation were attacked by the Pine shoot tortrix; hand-picking was resorted to before the larvae escaped. No. 3 plantation, of 17 acres, was planted in 1908-09 with Beech, Ash, and a few Oaks, at 6 feet apart, and filled to 3 feet apart with Scots Pine, Larch, and a few Silver Firs. In planting this plantation, the ground was "holed" 6 feet apart for the hardwoods, the softwoods being notched.

A nursery, 3 acres in extent, was formed in the Ampfield part of the estate in the winter of 1908. Only one-half of this nursery is under forest trees at one time. These are followed by a crop of Potatoes, when about 12 to 15 tons of manure are given to the acre, with a light dressing of artificial manure. In this nursery were noticed seed-beds of many Pines and Firs, the tiny seedlings looking the picture of health. Beds were noticed of Beech, Oak, and other deciduous trees, in a more advanced state of growth.

Mr. Storrie, head forester at Highclere Castle, expressed the opinion that this nursery was one of the finest in the country. Dr. Henry thought it a mistake to manure the ground, as trouble with fungus would be more likely to follow than if no manure were employed. This opinion was shared by others present.

At the luncheon, a most interesting discussion was opened by Mr. M. C. Duchesne (Bucks.) on converting coppice woods into standard woods, and, at this discussion, Sir George Cooper, his agent (Mr. Thorold), and head forester (Mr. Brunton) were commended for the excellent manner in which forestry was being carried out at Hursley. In the course of this discussion, it was mentioned that Dr. Henry had expressed his belief that English Ash, in 20 years time, would fetch 8s. per foot.

It was stated that in no case had the Larch sawfly been found in mixed plantations in this country. Specimens of the sawfly, together with cocoons and larvae, created a great deal of interest.

The timber yard and saw-mill at Hursley received attention on the occasion of this visit. The power used for sawing is electricity, which is found to be both efficient and cheap. For the year ending December, 1909, the charge for current was £60 5s. 3d., or an average of 3s. 10½d. for each working day, with two saws running.

Mention must be made of a plantation of Douglas Fir which has been planted recently. The healthy and vigorous appearance of all the young trees in the various plantations indicates that the work of planting has been carried out in a thoroughly efficient manner. *Wilmot H. Yates.*

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

ABSORPTION OF COPPER BY LEAVES.—It is interesting to note in the article on lime and sulphur sprays in your issue of July 9, that Mr. W. M. Scott's experiments at the U.S.A. Bureau of Plant Industries indicate that lime and sulphur sprays are efficient substitutes for Bordeaux mixture in controlling leaf-spot and Apple scab (*Fusicladium dendriticum*), but are less efficacious with Apple blotch (*Phyllosticta solitaria*) and bitter rot (*Glomerella rufo-maculans*). In the Woburn report for 1910, it is stated that the fungicidal properties of Bordeaux mixture lie in the fact that although the copper sulphate, when first applied, is combined with the lime, the copper becomes gradually dissolved again on the surface of the leaf under the action of damp atmosphere, and permeates the cell walls in dilute solution, thus rendering the cell sap toxic to fungoid growth. If much copper sulphate is dissolved on the leaf and gets absorbed by the cells in too large quantities scorching occurs, but if small quantities pass through no damage ensues. Scorching is much more marked in warm, muggy weather than in wet or dry weather. In rainy weather some of the surplus soluble copper gets washed off, and in dry weather the copper becomes soluble much more slowly. The increased scorching in warm, muggy weather may also perhaps be partly attributed to the more sappy vegetation growth and the consequent thinner epidermis of the leaves. The results of some experiments on this point of the absorption of copper by the leaves are given in the Woburn 1910 report, which may be of interest to the readers of the *Gardeners' Chronicle*. Twelve leaves of Bismarck Apple were sprayed with Bordeaux, and two days afterwards carefully washed in alternate washes of weak acid and water till all the surface copper had been removed. The leaves were then burnt and the ash analysed. The ash was found to contain .0003 grammes of copper. A note was made to the effect that much rain had fallen after the spraying, so that the amount of soluble copper absorbed might even have risen higher than the figure above stated if the weather had been warm and muggy. The point to be noticed is that the probable reason why lime and sulphur washes are less effective in the case of Apple blotch and bitter rot, is that in the two last mentioned diseases the mischief is much deeper seated than in Apple scab and leaf-spot, anyhow in the early stages, and hence a fungicide is required which will penetrate the tissues when applied superficially. In this case a certain amount of scorching is bound to occur, but the good done in most cases outbalances the injury. One very possible serious drawback to Bordeaux mixture is that, when frequently applied to long-standing crops such as orchard trees, a good deal of soluble copper must get washed from the trees into the soil. Also, as it has been ascertained by experiment that 12 leaves of Apple can contain as much as .0003 grammes of copper, when leaves are allowed to lie and rot under the trees where they fall in the autumn, the amount of copper present in the soil must be considerably increased. At Rothamstead it was found that one part in a million of soluble copper in the water in which Buckwheat was growing was sufficient to kill the plant. This shows what risks may be run of making the soil infertile by the frequent use of Bordeaux mixture or any other copper compound. So far, no cases seem to have occurred of injury to the soil, and so it is thought that the copper must combine with some substance in the soil to form insoluble compounds. But in soils dressed with frequent and heavy dressings of organic manure or any of the acid artificials, there might be some danger of these insoluble compounds being broken down again. Also, Bordeaux mixture is poisonous and cannot be used after fruit has attained a certain size, whereas lime and sulphur is not. Hence spraying can be done with the latter wash much later in the season. Of course, in that case the arsenate of lead which Mr. W. M. Scott suggests adding as an insecticide would have to be omitted in the later sprays. It would be interesting to know if the sulphur in the sulphur and lime washes does penetrate the cell walls of the leaves, although one would



FIG. 47.—PTEROSTYRAX (SYN. HALEZIA) HISPIDUM: FLOWERS WHITE.
(See p. 123.)

imagine that it might require more sulphur than copper to render the cell contents toxic to fungoid growth. Injury from Bordeaux spraying cannot be always put down to faulty mixing, although, of course, considerable care should be exercised during the making. The best results seemed to have been obtained by adding the copper sulphate in a fairly concentrated solution into lime water diluted to the full volume of the mixture minus the amount of water used to dissolve the copper sulphate. The reverse process of adding concentrated lime water to dilute copper sulphate is not nearly so effective in bringing about a fine precipitate. But if, in spite of precautions, some scorching occurs, there is always some satisfaction in knowing that copper sulphate has penetrated into the tissues of the leaves and may do good in the long run. *D. M. Cayley.*

A RECENT FAILURE.—Relating to the account of my affairs published in the last issue (see p. 91), I should like to state, with reference to the same, that the interest payable under the agreement of 1898, was at the rate of 10 per cent. per annum, excepting as to £400 at 6 per cent. I cannot avoid the reflection that this failure, the root of which is this excessive interest, might well serve as a warning to other persons, whilst it serves to explain my present position to those readers not familiar with all the circumstances. I beg to add also that Mr. A. Hassall, my late partner, is not a creditor, as stated in the original report of the Official Receiver, and that this fact was admitted at the public examination on July 29. *H. Stanley.*

INCREMENT VALUE DUTY.—I am indebted to Mr. H. Morgan Veitch for his courteous letter correcting the mistake I had fallen into, which I regret. Instead of consulting the Finance Act itself, I quoted from leaflet No. 24, published by the Budget League, of Whitehall House, S.W., which I happened to have in my pocket. I can only suppose that since that leaflet was published the Bill had undergone further amendment. Landowners should be grateful to Mr. Veitch for his exposition of the Land Clauses in this very complex Act published in the issue of *Gardeners' Chronicle* of July 30, p. 75. In regard to the assessment of nursery land for rating purposes, I do not wish to quibble; but though undoubtedly there are plenty of instances in which nurseries, and every other kind of property, have been grossly over-assessed, I maintain that Mr. C. E. Pearson's sweeping assertion that "assessment committees always assess nursery land at double or treble its value" is both unjust and absolutely incorrect. *H. S. Thompson.*

EUCRYPHIA PINNATIFOLIA.—An undeserved reputation for tenderness is probably the reason that this handsome deciduous shrub is still comparatively rare. When grown in a sunny position, where its growth becomes well ripened, *Eucryphia pinnatifolia* will safely pass through more than the average winter cold that we experience in the southern counties. The large, pure-white flowers are now opening, and, although unrelated, they bear a certain resemblance to those of *Hypericum calycinum*. This resemblance is due to the long filaments and yellow anthers of the *Eucryphia*. When the flowering is done, the rose-like foliage assumes a most attractive autumn colouring. Since writing the above lines, I have read Mr. Cook's interesting account of the "Effects of Last Winter upon Vegetation" (see p. 105) and it seems that Mr. Cook's experience is that *E. pinnatifolia* will stand at least 24° of frost, so we can safely call it a hardy shrub. *A. C. Bartlett.*

TWO RARE NATIVE ORCHIDS.—I have just received from the North of Ireland a flowering specimen of the rare little *Spiranthes Romanzoffiana*, a plant which is unknown elsewhere in Europe, though it extends from the Atlantic to the Pacific in North America. The original Irish station was a little meadow at Bantry Bay, which, unfortunately, was ploughed up and planted with Potatoes in 1886. Since that time I have recorded three other stations at Armagh, Londonderry, and Antrim, and specimens from these districts have been sent to me. The deliciously fragrant flowers are ivory white; they are arranged in a spiral spike fully 2 inches long. The plant grows in damp, sandy soil, usually by

the sea coast. The Lizard Orchid (*O. hircina*) is flourishing at two different places at least near Dover, where it flowered freely during early July. These are new stations for this singularly-interesting Orchid, so that the extermination of the plant, as long ago predicted, is not likely to take place—at least, for a long time to come—the grounds in which it occurs being inaccessible to the general public. *A. D. Webster.*

WILD DOUBLE FLOWERS.—I have in my possession specimens of double flowered forms of the following plants found growing wild:—*Anemone nemorosa* (Hitcham Wood, Suffolk), *Ranunculus heterophyllus* (Woolpit, Suffolk), *Ranunculus acris* (Hitcham, Suffolk), *Saponaria officinalis* (near Ross), *Lobelia erinus* (slopes of Table Mountain). *Lobelia erinus* occurred on the roadside in barren ground as a slender, wiry plant from a few inches to 18 inches high, with very small flowers. There are about 30 species of *Lobelia* in South Africa. *George Henslow, Drayton House, Leamington.*

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

AUGUST 2.—Present: Mr. E. A. Bowles, M.A., F.L.S., F.E.S. (in the Chair), Messrs. A. W. Hill, J. W. Odell, W. Hales, R. Hooper Pearson, J. T. Bennett-Poë, J. Douglas, A. Worsley, and F. J. Chittenden (hon. sec.).

Phlox sporting.—Mr. J. DOUGLAS showed flowers from the plants shown on August 31 last year which until then had produced white flowers, but were then flaked with lilac. These plants had been carefully marked, and had this year produced flowers almost entirely white, but with slight touches of lilac in them. The calyx was purple.

Aberrations in Antirrhinum.—Mr. W. HALES showed a variety of aberrations in the common *Antirrhinum*, consisting mostly of flowers tending to become regular. In one case the terminal flower had become completely peloric, and on the same shoot the normal corolla had at its base an anterior outgrowth very like the palate in form and colouring.

Gall on Willow.—Mr. BOWLES showed examples of galls on willow (*Salix alba*) from Enfield similar to those shown from the neighbourhood of Buckhurst Hill by Mr. Chittenden in October, 1906. The galls are apparently formed through the irritation set up by a mite (*Eriophyes salicis*), causing the repeated branching of a shoot which produces small and narrow, rather soft leaves, so that the whole mass measures up to a foot in length and 9 inches in diameter. The growth turns bright-red in autumn.

THE BRITISH PTERIDOLOGICAL.

AUGUST 1.—As customary on the August Bank Holiday this Society held its annual meeting on August 1. The place of meeting this year was at Moffat, in Dumfriesshire, the actual business meeting being conducted at Beattock Junction. The report of the Society was of a particularly satisfactory nature, the establishment of the *British Fern Gazette* in conjunction therewith having resulted in the addition of about one hundred new members, and the placing of the Society upon a far more substantial and far-reaching basis than before. Despite the expense incurred by the issue of the *Gazette* the financial report showed an increase of funds in hand. It was resolved that the publication of the *Gazette* should be continued permanently, Mr. Chas. T. Druery, V.M.H., having consented to continue the editorship. This gentleman was also appointed honorary secretary, owing to the much-regretted resignation of Mr. G. Whitwell, who has held the office since the inception of the Society. A vote of thanks was passed to Mr. Whitwell for his services in the past. The treasurer, Mr. Wilson, also resigned, and Mr. W. B. Cranfield was appointed to fill the vacancy. The rest of the business was of a more or less formal nature, and terminated, after the re-election of Mr. Alex. Cowan as president and chairman, and a vote of thanks had been passed to that gentleman for the great trouble he had taken in making the arrangements at Moffat.

As usual on such occasions, Fern-hunting parties were organised for the exploration of the district, but the weather was very unfavourable, and no very marked "finds" were discovered, though a number of angustate and crispate forms of *Lastrea montana*, the prevalent species, were met with. It was decided to hold the 1911 meeting at Barnstaple, in Devonshire, in order to afford the members in the Midlands and the North, where the species are relatively much less numerous, an opportunity of studying the more abundant and more varied Fern flora of the South of England. The subscription is five shillings, and the secretary, Mr. Druery, 11, Shaa Road, Acton, London.

EALING TENANTS' HORTICULTURAL.

AUGUST 1.—The summer exhibition of this society was held on August Bank Holiday, being the second annual show. There were two large tents, one devoted to flowers and the other to vegetables. Exhibits of Roses were poor, but Sweet Peas were excellent. Carnations and Picotees did not attract a great number of entrants, but the exhibits which were staged included some very fine blooms. In the class for Pansies and Violas. The blooms were all of very high quality. The class for indoor decorative plants attracted a very fair entry.

Some fine non-competitive exhibits were staged. Mr. LEOPOLD DE ROTHSCHILD, Gunnersbury House, Gunnersbury, filled the greater part of the central portion of one tent with stove and greenhouse plants. Mr. TIGWELL, Greenford, showed Sweet Peas in 22 different varieties, including King Edward Spencer, Helen Lewis, Countess Spencer, Audrey Crier, Clara Curtis, Minnie Christie, and Mrs. Hardcastle Sykes. He also staged a new variety, Mrs. Tigwell, having a cream ground, with carmine flaking. Mr. MAURICE HULBERT also staged a non-competitive exhibit, which consisted of a large bank of fine foliage and flowering plants, including some large standard trained Fuchsias. Messrs. FISHER, Thornton Heath, staged a very fine lot of Sweet Peas.

Altogether some 400 exhibits were staged, and the secretary, Mr. Sutton, who has worked very hard to bring the Ealing Tenants' Horticultural Society up to its present healthy state, is to be congratulated on the fine show.

In addition to the ordinary exhibits of horticulture and floriculture, the Arts and Crafts Class put up a show of articles made during the past session.

Whilst judging was taking place, Mr. John Burns, President of the Local Government Board, inspected the show and the estate generally. He was taken over the estate by Mr. Vivian, M.P., and he expressed pleasure at seeing the progress made since his visit 15 months ago.

LEICESTER ABBEY PARK FLOWER SHOW.

AUGUST 2, 3.—This exhibition took place, as usual, on the Tuesday and Wednesday following Bank Holiday. The number of entries and the number of competitors were about equal to those of last year.

The two great features of the show were the Sweet Peas and the Roses. It is estimated that over 3,000 stands of the former were set up, and of the latter nearly 30,000 blooms.

There were five competitors in the largest group class. The exhibits were arranged along the centre of the tent, and each occupied 160 square feet. The 1st prize was awarded to Messrs. JAMES CYPHER & SONS, Cheltenham, for a collection of Palms, with *Codiaeums* and other foliage plants, relieved with Orchids, including several well-flowered plants of *Disa grandiflora*. Messrs. CYPHER & SONS dispensed with the usual central bank, and arranged in place thereof a kind of rustic arch, standing well above the general groundwork. The arch was flanked at each bow with fine specimens of *Coccos*, and crowned with a magnificent specimen of *Kentia Belmoreana*; each corner had a highly coloured plant of *Codiaeum Warrenii*. The 2nd prize group was exhibited by Mr. W. A. HOLMES, Chesterfield, the display being very little inferior to that of Messrs. CYPHER & SONS; 3rd, Mr. H. ROGERS.

In the gentlemen's gardeners' class only two exhibitors entered, Mr. Weston (gr. to C. F.

OLIVER, Esq., Hughenden, Leicester) and Mr. Bolton (gr. to F. BUCKLER, Esq., Thurmaston). These were placed as their names appear.

At the end of the tent, Messrs. JAMES WRIGHT & SONS, Thurmaston, set up a group of plants, "not for competition," the group containing Roses, Palms, Lilies, Fuchsias, Pelargoniums, with a central bank of Begonias.

The table decorations were delightfully graceful and light, the first award going to Mr. Weston (gr. to C. F. OLIVER, Esq.), for an arrangement of salmon-pink-coloured Sweet Peas, and the 2nd prize to Mr. SIMS, of Barrowash, who also employed Sweet Peas.

In the classes for bouquets, Messrs. PERKINS & SON, Coventry, were 1st all round. Messrs. SIMPKIN & JAMES followed closely, and received many awards.

For a collection of herbaceous flowers, C. F. OLIVER, Esq., was placed 1st, and Messrs. J. WRIGHT & SONS 2nd, both with choice collections of fresh bright specimens well set up.

Violas were shown by Messrs. W. PEMBERTON & SON, Bloxwich; Mr. W. BARSBY, Leicester; and Mr. LANSDALE, Desford, who received the 1st, 2nd, and 3rd prizes respectively.

The best collection of 24 blooms of Begonias was exhibited by Messrs. JAMES WRIGHT & SON, who were awarded the 1st prize.

In the class for 36 H.P. Roses, Messrs. PERKINS & SON were placed 1st, closely followed by the KING'S ACRE NURSERIES, LTD., Hereford; 3rd, Mr. W. H. FRETtingham, Beeston.

In the class for 24 blooms, Messrs. PERKINS were again placed 1st, but for 12 Tea Roses, the KING'S ACRE NURSERIES took the premier place, with Mr. FRETtingham 2nd.

In the class for 12 blooms of one variety, Messrs. PERKINS were awarded the 1st prize, having *Lyon Rose*: 2nd, Mr. FRETtingham.

A bloom of Wm. Sheen in Messrs. PERKINS's box received the premier award offered for the best Rose in the show.

The KING'S ACRE NURSERIES showed the best exhibit of 12 blooms of Tea Roses of one variety.

Vegetables are always a strong feature at Leicester, and this year the production was not inferior to that seen in former years. Mr. J. HUDSON, of Gimson Road, Leicester, won the premier prize in the class for a collection and in many of the single-dish classes.

In the fruit classes Mr. W. PARKER, of Market Rasen, was placed 1st for a collection.

NON-COMPETITIVE EXHIBITS.

Mr. W. BENTLEY showed a collection of Roses. (Gold Medal.) Another very fine display of Roses was made by Mr. J. BARROW, The Rose Garden, Oadby. (Gold Medal.) Messrs. SIMPKIN & JAMES, Leicester, had a table of floral decorations, which contained many wreaths and other designs. (Gold Medal.) Mr. FRANK BOUSKELL, Market Bosworth, occupied the whole semi-circular end of a tent with a display of herbaceous plants. (Gold Medal.) Mr. GEO. UNDERWOOD, Saffron Hill Nurseries, occupied the whole side of one tent with Sweet Peas, Violas, and Pansies. There were many items in this exhibit of special merit. Messrs. LAMB & SONS, Bingham, set up a fine table of Sweet Peas, as did Mr. F. E. RIDDLE, of Belgrave Great, who also showed Roses. Messrs. HARRISON & SONS, Market Place, had a display of vegetables, fruit, and Sweet Peas. Mr. C. WARNER, The Abbey Nursery, made a good show of Fuchsias, Pelargoniums, Salvias, Coleus, and other plants; also a collection of shrubs, mostly Conifers in pots. Mr. W. J. UNWIN, Histon, showed Sweet Peas. Messrs. JARMAN & CO., Chard, had a showy stand of Zonal Pelargoniums and Sweet Sultan. Mr. R. PRINGLE, Belvoir Street, Leicester, set up an unusually fine table of herbaceous and general garden flowers and Sweet Peas. Messrs. BAKER'S, Wolverhampton, filled half the centre of a large tent with Roses, Phloxes, and Violas, making a very imposing display.

A rock-garden exhibit was made by Mr. J. WILKINS, Syston.

SCOTTISH HORTICULTURAL.

AUGUST 2.—The monthly meeting of this society was held at 5, St. Andrew Square, Edinburgh, on this date. Mr. Whytock, the president, was in the chair, and there was an attendance of 80 members.

Mr. Thos. MacPhail, Archerfield Gardens, Dirlton, read a paper on "The Cultivation of Peaches and Nectarines under Glass." To

illustrate the results of the practice he advocated, he showed some fine examples of fruit of Hale's Early Peach and Lord Napier Nectarine. He attached much importance to the thorough ventilation of the fruit houses, and the free use of the syringe. He said the best results could not be obtained by growing several unlike varieties in one long house; rather would he have the house in compartments, each compartment being under separate control as to heating, &c., and each containing only one kind of tree—early, mid-season, or late. He described in detail the construction of the border, drainage, soil, selection of trees, planting, feeding of the plants, pruning, training, thinning of the fruit, disbudding, and general management. After the gathering of the fruit, the efforts of the cultivator must, he said, be wholly concentrated on the building up of the trees for the following season; neglect of this would tell a tale later in bud dropping, in the fruit not setting or not stoning, or in splitting at the stone. The trees could not be kept too cool during the resting period. The management of pot trees was also remarked upon.

Certificates of Merit were awarded to a very fine new bedding Pelargonium named *Amalgamation* (a cross between Paul Crampel and West Brighton Gem), exhibited by the raiser, Mr. ALEX. THOMSON, Dean Gardens, Edinburgh; and to a bedding *Calceolaria*, *Queen Alexandra*, exhibited by Messrs. DOBBIE & CO., Edinburgh.

A Cultural Certificate was awarded to Mr. R. CAIRNS, the manager of the City of Edinburgh Distress Committee's farm at Murieston, for an exhibit of Strawberries grown on land reclaimed by the unemployed there. The varieties included *Givon's Late Prolific*, *McMahon*, *Duke of Edinburgh*, *Scarlet Queen*, and *The Laxton*. The average weight of the fruits of *Givon's Late Prolific* being 2 ounces. The ground had been treated with city refuse, but no dung or artificial manure had been used.

Six new members were elected. The arrangements for the excursion to Yester and Gosford on August 13 were announced.

The paper for the meeting on September 6 will be on "Perpetual-flowering Carnations: Their Past, Present, and Future," by Mr. J. S. Brunton.

MIDLAND CARNATION AND PICOTEE.

AUGUST 4, 5.—This society's 20th annual exhibition, held at the Botanical Gardens, Edgbaston, on the above dates, was a good average show. The weather was fine on both days, and the attendance of subscribers and visitors unusually large. Sweet Peas, for which special prizes were offered by Robt. Sydenham, Ltd., were well shown.

DRESSED FLOWERS ON STANDS.

The first class was for 12 self Carnations. Six good exhibits were placed before the judges, who awarded the 1st prize to Mr. A. R. BROWN, Wychall Lane, King's Norton, who showed well-finished, even-sized flowers of the varieties W. H. Parton, Ayesha, Mrs. Howard Green, Albion, Modesty, Theodore Galton, Solfaterre, Bonnie Dundee, Lyndsay, Elizabeth Schiffner, Ariadne, and Mulberry. In the 2nd prize collection, from Mr. HAYWARD MATHIAS, Medstead, we noted splendid flowers of *Ann Hathaway*, *Titan*, *Helen*, *Daffodil*, and *Deux*. 3rd, Mr. W. SYDENHAM, Melbourne, Derbyshire.

In a smaller class, for six self Carnations, Mr. F. W. GOODFELLOW, Walsall, won the 1st prize with superb flowers of *Sir Galahad*, *John Pope*, *Miss Willmott*, *Daffodil*, *Dinah*, and *Cardinal*. 2nd, Mr. G. D. FORD, Acocks Green, whose best flowers were W. H. Parton, *Crystal*, and *Cardinal*.

Twelve yellow-ground Picotees.—Mr. HAYWARD MATHIAS took the lead with exquisite flowers of *Gloria*, *Her Majesty*, *John Ruskin*, *Exquisite*, *Deux*, *S. Weston*, *Mrs. Heriot*, *Togo*, *Astrophel*, *Thisbe*, and *Archie Brown*. 2nd, Mr. A. W. JONES, Stechford, with a beautiful set of flowers. His best varieties were *Agnes*, *Mrs. Oldfield*, *Santa Claus*, and *Togo*. 3rd, Mr. W. SYDENHAM.

In a class for six yellow-ground Picotees, there appeared to be very little difference between the exhibits from Mr. F. W. GOODFELLOW and Mr. G. D. FORD, who were placed 1st and 2nd respectively. The blooms in each stand were shapely, of good size, well-coloured, and fresh. 3rd, Mr. HARRY SKEELS, Walsall.

Fancy Carnations.—Mr. H. MATHIAS was successful amongst six competitors for 12 blooms, showing very fine examples of Mrs. Leo Hunter, Highland Lass, Lord Steyne, Rhea, Linkman, Hidalgo, Hecla, Samuel, Father O'Flynn, Devonian, Orlando, and M. Thurstan. 2nd, Mr. A. W. JONES, who had grand flowers of Lord Steyne, Linkman, Billy Barlow, and Sam Weller. 3rd, Mr. A. R. BROWN.

Ten entries were made in the next class, which was for six fancy Carnations. Mr. F. W. GOODFELLOW won the 1st prize; he showed large flowers of Lord Steyne, King Solomon, Ronny Buchanan, Sam Weller, Linkman, and Jupiter. 2nd, C. ALCOCK, Esq., Blundellsands, whose blooms were beautifully fresh, but smaller than those exhibited by Mr. GOODFELLOW. 3rd, Mr. G. D. FORD.

Twelve white-ground Picotees.—The leading award in this class went to Mr. C. F. THURSTAN, Penn Fields, Wolverhampton, who had beautifully-fresh flowers of Amy Robsart, White Heather, Excelsior, Brunette, Fortrose, Thos. William, Carrie Goodfellow, Mrs. Hoskier, W. E. Dickson, Fair Maiden, Myra, and Queen of Spain. 2nd, Mr. C. H. HERBERT, Acocks Green, whose best varieties included Clementina, Favourite, Ganymede, and Thos. William. 3rd, Mr. A. R. BROWN.

In a smaller class for six white-ground Picotees, the Rev. C. A. GOTTWALTZ, Hadzor Presbytery, Droitwich, gained the 1st position, with refined flowers of Lady Sybil, Beatrice, Mrs. C. H. Herbert, Maud Brown, Thomas William, and Elaine. 2nd, Mr. F. W. GOODFELLOW, who had shapely blooms of Mrs. Gorton, Brunette, and Carrie Goodfellow. 3rd, Mr. G. D. FORD.

Twelve flakes or bizarres.—Although only four exhibits were shown in this class, the flowers were of excellent quality, especially those shown by Mr. HAYWARD MATHIAS, who was awarded the 1st prize. The varieties exhibited were Master Fred, Gordon Lewis (extra good), S. Payne, Mrs. Rowan, Merton, George Rudd, Free Trade, G. Melville, Robert Houlgrave, Sportsman, Wm. Skirving, and Admiral Curzon. 2nd, Mr. C. H. HERBERT, whose flowers of Peter Pan, Gordon Lewis, Master Fred, and Meteor were of outstanding merit. 3rd, Mr. C. F. THURSTAN.

In the next class, which was one for six flakes or bizarres, Mr. G. D. FORD was awarded the 1st prize for large, well-formed flowers of Peter Pan, George Rudd, Wm. Skirving, Gordon Lewis, Arthur, and Admiral Curzon. 2nd, Mr. C. J. WHITE, Walsall. 3rd, Mr. H. BOYS, Walsall.

SINGLE BLOOMS.

Competition was keen in several of the classes provided for single blooms. The successful 1st prize winners were Mr. C. H. HERBERT, Mr. A. R. BROWN, Mr. H. MATHIAS, Mr. W. SYDENHAM, Mr. C. F. THURSTAN, Mr. C. WALL, Rev. C. A. GOTTWALTZ, Mr. A. W. JONES, Mr. W. H. TWIST, and Mr. F. W. GOODFELLOW.

UNDRESSED FLOWERS.

The undressed flowers, shown in vases, with Carnation foliage, were both numerous and good. The seven exhibits in a class for 12 self Carnations made a very pretty feature. The 1st prize was won by Mr. W. H. PARTON, Hollywood, Birmingham, who showed exquisite flowers of *Daffodil*, *Hildegard*, *W. H. Parton*, *Helen*, *Gottwaltz*, *Conrad*, *Nubian*, *Sir Galahad*, *Bridegroom*, *Mrs. Guy Sebright*, *Hadzor*, *Lady Hermione*, and *Cassandra*. 2nd, Mr. C. ALCOCK, Blundellsands. With the exception of *Duchess* of Wellington and *Kafir*, all the blooms in this stand were excellent. 3rd, Mr. A. R. BROWN.

For six self Carnations, A. GORDON RUSSELL, Esq., Wheatley, Oxford, beat 11 competitors. He had large flowers of *Sir Galahad*, *Agnes Sorrel*, *Cardinal*, *Mrs. Flight*, *Enid*, and *Daffodil*. 2nd, Mr. W. H. TWIST, Yardley, whose flowers were of good size, fine quality, and very fresh.

There were eight splendid entries in the class for 12 fancy or yellow-ground Carnations. The 1st prize was gained by Mr. W. H. PARTON for a meritorious set of flowers, effectively staged. He showed *Liberté*, *Voltaire*, *Lord Steyne*, *Merlin*, *Sam Weller*, *Mrs. F. Wellesley*, *Paquin*, *Ronny Buchanan*, *Erl King*, *Mandarin*, *R. A. Rowberry*, and *Westfield Seedling*. 2nd, Mr. A. W. JONES, whose long-stemmed flowers were much admired. 3rd, Mr. A. R. BROWN.

In the next class, for six fancy or yellow-ground Carnations, there were 10 entries. 1st, Mr. J. D. WILLIAMS, Smethwick. The varieties Ronny Buchanan, Sam Weller, and Merlin were well shown.

FLOWERS SHOWN IN TREES.

The most important class in this section was for 12 varieties of selfs, yellow-ground Picotees, or fancies, arranged on a space not exceeding 30 inches by 24 inches. The eight exhibits made a prominent feature of the show. The 1st prize was won by Mr. W. H. PARTON, who showed magnificent flowers of Sam Weller, Mandarin, Lord Steyne, Merlin, Voltaire, Sappho, Sir Galahad, Ronny Buchanan, R. A. Rowberry, W. H. Parton, King Solomon, and Bridegroom. The flowers in the 2nd prize set were well arranged, but the quality was hardly equal to that of Mr.

Picotees was shown by Mr. A. W. JONES, in Santa Claus. Mr. H. MATHIAS was next with Togo. The best yellow, buff, or terra-cotta self Carnation came from Mr. A. R. BROWN. His blooms of Elizabeth Schiffner were excellent. Mr. C. WALL won the 1st prize in a class for yellow or buff-ground fancy Carnations, showing Mandarin in beautifully fresh condition.

AMATEUR CLASSES.

Five prizes were provided for exhibitors who do not grow more than 300 plants nor employ a gardener regularly. The premier position in a class for six white-ground Carnations or Picotees (dressed) was won by Mr. J. B. WILLETTTS, Yardley. His flowers of Mrs. W. H. Twist and Fair Maid were particularly good. 2nd, Mr. E. KENWRIGHT, Smethwick.

In the next class, which was for six self Carna-

PREMIER FLOWERS (DRESSED).

Bizarre Carnation Master Fred, shown by Mr. H. MATHIAS; flake Carnation Gordon Lewis, shown by Mr. H. MATHIAS; heavy-edged white-ground Picotee Mrs. Twist, shown by Mr. W. H. TWIST; light or wire-edged white-ground Picotee Mrs. Gorton, shown by Mr. F. W. GOODFELLOW; heavy-edged yellow-ground Picotee Santa Claus, shown by Mr. C. H. HERBERT; light-edged yellow-ground Picotee John Ruskin, shown by Mr. C. WALL; yellow-ground fancy Carnation Highland Lass, shown by Mr. H. MATHIAS; self Carnation W. H. Parton, shown by Mr. A. R. BROWN.

PREMIER FLOWERS (UNDRESSED).

Self Carnation W. H. Parton, shown by Mr. A. H. BIRCHLEY; fancy Carnation Mandarin, shown by Mr. C. WALL; yellow-ground Picotee Agnee, shown by Mr. A. W. JONES.

SPECIAL MEDAL AWARDS.

The Silver Champion Medal, offered to any exhibitor gaining the greatest number of points in the large classes was won by Mr. HAYWARD MATHIAS, with 111 points. Mr. A. R. BROWN (95 points) obtained the Bronze Medal. The Silver Medal offered in the smaller classes was won by Mr. G. D. FORD, with 72 points. Mr. F. W. GOODFELLOW secured the Bronze Medal, with 69 points. The above medals were offered by the Birmingham Botanical and Horticultural Society.

Mr. C. H. HERBERT won the Silver Medal offered in the single bloom classes, &c., with 37 points; and Mr. A. H. BIRCHLEY secured the Bronze Medal offered to the most successful exhibitor in the amateur classes, with 73 points.

SWEET PEAS.

The 1st prize in a class for 12 varieties of Sweet Peas was won by Mr. T. JONES, Ruabon; 2nd, Mr. J. HAYCOCKS, Wrexham; 3rd, Mr. E. DEAKIN, Hay Hall, Birmingham.

For six varieties of Sweet Peas, Mr. E. TILT, New Oscott, was placed 1st with a handsome set of flowers. 2nd, Mr. J. SCEANEY, Harborne.

There were five entries in a class provided for Sweet Peas arranged in rural decorations on separate tables, each 6 feet by 3 feet. 1st, Mr. A. J. BLAIR, Stoke-on-Trent, who employed pale pink Sweet Peas, Gypsophila, and sprays of Selaginella. 2nd, Mr. E. DEAKIN.

HONORARY EXHIBITS.

Messrs. W. H. SIMPSON & SONS, Birmingham, furnished the entire front of the orchestra with a well-arranged group of Sweet Peas. (Silver-gilt Medal.)

ROBERT SYDENHAM, LTD., Birmingham, had a long table decorated with Sweet Peas of excellent quality, in rustic stands, of various sizes and designs. (Silver-gilt Medal.)

From Messrs. JARMAN & Co., Chard, Somerset, came an attractive exhibit of four varieties of Centaureas. (Silver Medal.)

THE LAPWORTH NURSERIES, Hockley Heath, sent a group of cut flowers indifferently arranged. (Bronze Medal.)

Mr. A. WELHAM, Bridgnorth, had cut flowers of his new Chrysanthemum A. Welham. (Vote of thanks.)

Mr. J. J. W. THACKRAY, Côtel, Guernsey, sent Gladioli and Sweet Peas. The Sweet Peas had suffered in transit, and they were not set up to the best advantage.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

AUGUST 8.—The monthly meeting was held at the Royal Horticultural Hall, Westminster, on the above date. Mr. Chas. H. Curtis occupied the chair. One new member was elected, making a total of 50 this year. The death certificate of Mr. Robert Anderson (a lapsed member) was produced, and a cheque for £29 13s. 6d., being the amount standing to his credit, was granted to his nominee. Several members over 60 years of age have taken advantage of Rule 18 to withdraw the interest on their deposits, to enable them to pay their contributions. The amount of sick pay for the past month amounted to £29 17s.



FIG. 48.—BORDER CARNATION "FORESTER," AS SHOWN BY MR. JAMES DOUGLAS. COLOUR, YELLOW WITH CHOCOLATE, AND RED MARKINGS.

Obtained an Award of Merit at the Royal Horticultural Society's meeting on August 3, 1910 (see p. 100).

Parton's collection. The exhibitor was Mr. A. W. JONES.

In a smaller class for six varieties of selfs, yellow-ground Picotees, or fancies, Mr. G. D. FORD showed some wonderfully good blooms of Linkman, Liberté, W. H. Parton, Crystal, Bernice, and King Solomon. 2nd, Mr. J. D. WILLIAMS.

In the classes for single vases containing three blooms of any one variety, there was fair competition, and some very fine blooms were exhibited. A. GORDON RUSSELL, Esq., Wheatley, Oxford, had the best vase of white Carnations in the variety Sir Galahad. Mr. A. R. BROWN was 2nd with Alba. Mr. W. H. PARTON brought the winning vase of rose, salmon, or scarlet self Carnations. He exhibited the variety Mrs. Guy Sebright in capital condition. The same exhibitor also had the best vase of dark self Carnations in Harry Parton. The best vase of yellow-ground

tions (dressed), Mr. A. H. BIRCHLEY, Selly Oak, won the 1st prize with a very fine set of flowers. His varieties were Ann Hathaway, W. H. Parton, Mrs. G. W. Flight, Hildegard, Camilla, and Seagull. 2nd, Mr. J. B. WILLETTTS. Mr. WILLETTTS was placed 1st for six fancy or yellow-ground Carnations or Picotees (dressed). 2nd, Mr. A. H. BIRCHLEY, who secured 1st prizes in classes for six self Carnations (undressed), and for six fancy or yellow-ground Carnations or Picotees. Mr. J. B. WILLETTTS was 2nd in both classes.

AWARDS TO NOVELTIES.

First-class Certificates were awarded to rose flaked Carnation Peter Pan, shown by Mr. C. H. HERBERT; dark self Carnation Harry Parton (W. H. Parton × Nubian), shown by Mr. W. H. PARTON; fancy Carnation Hecla, shown by Mr. HAYWARD MATHIAS; and yellow-ground Picotee Gloria, shown by Mr. HAYWARD MATHIAS.

KNARESBOROUGH AND DISTRICT HORTICULTURAL.

AUGUST 2.—The annual show in connection with the above society was held on Tuesday, in the grounds of Conyngham Hall, the residence of C. E. Charlesworth, Esq., J.P. Notwithstanding very unfavourable weather, the show proved an unqualified success, the attendance being very large. All the exhibits reached a high standard of excellence, Sweet Peas being exceptionally fine. Two features of the show were a grand exhibit of Sweet Peas staged by Mr. BREADMORE, Winchester (gold medal), and a fine stand of hardy flowers and Roses, staged by Messrs. DICKSONS, LTD., Chester. (Silver medal.)

Amongst the principal prize-winners were A. S. LAWSON, Esq., J.P., Aldboro Manor (gr. Mr. A. Nicholson), LORD MOWBRAY & STOURTON, Allerton Park (gr. Mr. P. Coldham), J. ADAMS, Esq., Harrogate, D. W. WYBRANTS, Esq., Winsley Hurst, Ripley, Leeds (gr. Mr. W. Towns- end), Mr. ELLIOTT, Ripon, Mr. G. KNIGHT, Scriven, and Mr. J. W. DAVIDSON, Dacre Banks, Leeds.

KIRKCUDBRIGHT HORTICULTURAL.

AUGUST 5.—The annual show of the Kirkcudbright Horticultural Society was held in the Town Hall of the burgh on this date. Exhibits of outdoor flowers were not quite so fine as usual, but, on the whole, the show was quite equal to the average of these annual exhibitions. The classes open to gardeners were well contested as a rule, and pot plants, cut flowers, especially Sweet Peas, vegetables and fruit were all of much excellence. In the class for a table of pot plants two well-known exhibitors, Colonel GORDON, Threave (gr. Mr. James Duff), and the Countess of SELKIRK, Balmae (gr. Mr. W. McGuffog), competed, the former being the winner of the 1st prize with a well-arranged table of good plants, Mr. McGuffog being a close second. Colonel GORDON and Mr. W. BROWN, Millburn Street, were the most successful competitors in the other classes for pot plants. In the cut flower section several amateurs competed with the gardeners successfully. The leading winners in these classes were Mr. W. M'CORMACK, Tariff; Misses BLACKBURN, Park House (gr. Mr. J. Wallace); Mr. J. DUFF; Mr. R. WEBSTER, Tongland; Mr. J. HALLIDAY, Greystone Cottage, and Mr. W. W. MORRISON, Kirkcudbright.

Roses were very good, the winner of the 1st prize for H.P. and H.T. varieties being Mr. J. WALLACE, and for Teas, Mr. J. DUFF. Mr. J. DUFF and Mr. J. SCOTT, Barwhinnock, led for Sweet Peas.

Fruit is usually well shown at these shows. Major MAXWELL, Glenlair (gr. Mr. B. Rutherford); Mr. J. DUFF, and Mr. W. MCGUFFOG were the leading prize winners. Mr. RUTHERFORD was placed first for Black Hamburg Grapes; and Mr. DUFF for white and also black Grapes, except Black Hamburgs. Mr. RUTHERFORD was awarded the 1st prize in the class for a collection of fruit; and Mr. DUFF excelled with Apples.

In the vegetable classes Mr. W. BROWN, Millburn Street, Kirkcudbright, was placed first for a collection; 2nd, Countess SELKIRK (gr. Mr. W. McGuffog). Mr. R. MIDDLETON, Kirkcudbright; Mr. B. RUTHERFORD; Mr. J. DUFF; Mr. F. HANNAH, Kirkcudbright, and Mr. R. COLEMAN were also successful exhibitors of vegetables.

DEBATING SOCIETIES.

BATH GARDENERS'.—The monthly meeting of this society was held on Monday, July 25, in the Foresters Hall, under the presidency of Mr. T. Parrott. "Romance of plants" formed the subject of an interesting paper by Mr. J. D. Halliburton. The lecturer dealt chiefly with plants in a wild state.

BRISTOL & DISTRICT GARDENERS'.—The monthly meeting was held on July 28, at St. John's Parish rooms. Mr. Hayball presided. Mr. Taylor, of Bath, read paper upon "Grape Thinning." The lecturer said the first operation in connection with thinning is disbud- ding, deciding which buds to leave, preference should be given to those on the upper side of the stems. Ten days after flowering thinning should be commenced, and, as seven out of eight berries will have to be cut out, this cannot be done too early. The bareness on the top of the bunches so generally seen is the fault of cutting out too many berries, and, if more were left, they would push each other up and de- stroy the stem. The Muscat of Alexandria Grape should be thinned sparingly at first, but in the case of Black Alicante the removal of surplus berries must not be long deferred.

LAW NOTES.

CLAIM FOR SEEDS.

At the King's Lynn County Court on the 4th inst., his Honour Judge Mulligan, K.C., gave judgment in the Sensation Wheat case, between Charles W. Marsters, seed merchant, Lynn, and John William Whittome, farmer, Rosslyn, March.

His Honour said: The plaintiff claims £13 15s. for wheat sold, and the defendant counterclaims £48 on the ground that the goods delivered were bad. The plaintiff is well known as the intro- ducer of French seed Wheats; the defendant is a farmer who is accustomed to sow 250 acres or more of land with wheat. He knew some fine crops had been raised from Sensation Wheat supplied by the plaintiff, and made up his mind to plant 16 acres with it. Accordingly on Novem- ber 8, 1909, he went to St. Ives Market and met the plaintiff. The plaintiff there and then agreed to sell, and the defendant agreed to buy, five quarters of Sensation seed Wheat (second year), 55s. per quarter, to be delivered at March Railway Station. The particular purpose for which the goods were to be used, namely to pro- duce a crop of Sensation Wheat, was known to both parties. A memorandum to satisfy the Statute of Frauds was not drawn up, but the negotiations were finished, all the terms were agreed, and the parties separated. It only re- mained for the seller to deliver the wheat and for the buyer to pay the price. As between man and man the bargain was concluded. On Novem- ber 9 the plaintiff's manager at King's Lynn posted an envelope addressed to the defendant at March, containing what he called "an invoice." But on close examination the docu- ment turns out to be something more than an invoice, more than a letter of advice of the dis- patch of the wheat with the price. It contains two new provisions, first, "Terms: Net cash in 14 days; interest at 5 per cent. charged upon overdue accounts," and secondly, underneath in small print, "C. W. M. gives no warranty as to description, quality, productiveness, or any other matter of seeds or seed corn, and is not in any way responsible for the crop." The first is not insisted upon, but the second, the small print clause, is strongly relied upon by the plain- tiff. It is not clear whether the envelope con- taining the so-called invoice was open or closed, or whether it had or had not the word "invoice" on the outside. Be that as it may, I am perfectly satisfied, after paying great attention to the very searching cross-examination of Mr. Whittome by Mr. Crawford, and to his able argument, that the document so sent had the appearance of an ordinary bill, and nothing else, and that the defendant understood and regarded it as a bill and nothing but a bill. The defendant did not open or read the document, but put it just as it came into a drawer to take to town and pay when he went to market, as a farmer would naturally do. It remained in the drawer until after the Wheat was taken from March Railway Station and planted towards the end of November. The defendant believed there was a bill in writing, or printing, in the envelope. But I have come to a conclusion, and find as facts, that the defendant did not until after he saw his solicitors in 1910 know or suspect that the enve- lope so sent, or anything in it, contained any stipulation or condition relating to the bargain which had been made at St. Ives on Novem- ber 8; that the plaintiff never did what was reasonably sufficient to give the defendant notice of the new terms now sought to be imposed upon him by the so-called invoice, and that nothing whatever occurred to give the defendant the slightest indication of any alteration in, or addi- tion to, the terms he and the plaintiff had openly agreed upon face to face on November 8; the taking of the Wheat by the defendant to his farm had reference to the bargain of November 8, and nothing else. But, argued Mr. Crawford, the small print clause only expresses a custom of the seed trade, and must be read into the agree- ment. The alleged custom was unknown to the defendant, and does not exist in relation to farm seeds. If it did prevail it would resemble a cancer rather than a custom. It would eat the heart out of contracts. It would, for example, change the very substance of this transaction from a sale of seed for sowing to a sale of grain for grinding into flour. No sane man would give 50 per cent. above the market price for

Wheat for that purpose. Common sense and common law with one voice say that any such custom would be repugnant to the fundamental condition of this purchase, and would be utterly unreasonable and invalid. Counsel further said he did not care whether the defendant had read the invoice or not, for he had it in his possession, and he (counsel) was entitled to assume as matter of law that the defendant was bound by the printed terms in the invoice. All I need say is the House of Lords held otherwise. Lord Herschel said: The knowledge of the contents of such a document and the sufficiency of the notice given of an additional term were questions of fact for a jury. (Richardson v. Rowntree (1884), A.C. 217.) As the defendant had not notice and was not aware of what was printed, the printed terms never formed any part of the bargain. In fact, the only bargain from first to last was that made at St. Ives. This is strongly confirmed by the plaintiff's own particulars of claim, which are as follows:—"1909, November 8. To 5 quarters of Wheat Sensation (second year) at 55s. £13 15s." It is on the bargain of the 8th, and nothing else, the parties must stand or fall. Hence I need not now consider the decision of Mr. Justice Channell in Howcroft v. Perkins (16 Times, L.R. 217) or the conflicting decision of Mr. Justice Bray (in Wallis v. Pratt, 26 Times, L.R. 253) relied on by the construction of the small printed matter, or the dissonant review of those decisions in the Court of Appeal, which has since been reported (26 Times, L.R. 572).

The next question is: Did the plaintiff carry out his bargain? He tried hard to show that the Wheat sent to the defendant was grown on a farm at Mildenhall, but an essential link in the chain of evidence was wanting, for I place no reliance whatever in the story of the witness who sent this and nine other lots of Wheat away from Docking on the same day; his mind is a blank as to the other nine, and altogether his evidence is worthless for any purpose except to reveal the confusion and want of intelligent supervision which prevail at Docking when the plaintiff is not there. It is utterly impossible to say where the Wheat sent to the defendant was grown. But no matter where it came from, the defendant planted it under the most favourable conditions, during a period of dry weather, in the best of soils, well prepared to receive it. Only one-tenth germin- ated. Ordinary seed Wheat bought at 36s. a quarter, and planted alongside and around this Sensation Wheat at the same time and under the same conditions, sprang up and gives promise of a abundant crop. Why did the Sensation Wheat fail? The witnesses put it down to heating or kiln drying. Mr. Stephen Gregory (a witness for the plaintiff), whose testimony in these matters always carries great weight, said he could not account for the occurrence unless the Wheat delivered was bad or heated. I refer, and find as facts, that nine-tenths of it was not seed; that the bulk of it consisted of grains or carcasses of Sensation Wheat in which the embryo had been killed by heating, or some other means before it left Docking. Even the plaintiff said heating would kill the germ. If a farmer em- ployed a well-known and skilful agent to buy for him 10 short-ton heifers for breeding purposes, and agreed to pay the cost price and 10 per cent. commission, and if that agent delivered one heifer and nine carcasses of heifer beef with or without an invoice, saying he (the agent) gives no warranty, could it be said that the agent fulfilled his contract? Certainly not. Neither did the plaintiff in this case. Again it is said the plaintiff did not know that the Wheat germs were killed. True, but that is no justification. In Reese v. Smith (1869), 4 E. & J. Ap. 79, Lord Cairns said: "I apprehend it to be the rule of law that if persons take upon themselves to make assertions as to what they are ignorant, whether they are true or untrue, they must, in a civil point of view, be held as responsible as if they had asserted that which they knew to be un- true." And in Redgrave v. Hurd (1881) 20 C.D. 12, Sir George Jessel adds: "Even assuming that moral fraud must be shown, you have it where a man, having obtained a beneficial con- tract by a statement which he now knows to be false, insists upon keeping that contract. To do so is a moral delinquency; no man ought to seek to take advantage of his own false statement." These are not singular instances of contract like the cases cited in argument. They are the

generalisations of two of the three great judges of the Victorian Age (the third being Lord Blackburn). To apply those rules to the facts before me: The plaintiff sold this Wheat for sowing. He represented it to be the seed Wheat, and in the witness box he admitted that a Wheat that is incapable of germinating is not a seed Wheat. It turned out that the bulk of this Wheat was incapable of germinating, though the plaintiff did not know it at the time. Now that he does know it, he insists upon keeping that contract and demands the full 55s. per quarter. The claim in accordance with the principles laid down by Lord Cairns and Sir George Jessel is bad in law and bad in morals. A merchant is, of course, justified in charging the highest price he can obtain, but he must deliver the genuine article as sold.

As to the counter claim, the defendant is entitled to be paid for his extra work and labour in re-sowing. He thinks he also should be allowed something for the difference in value between a crop of ordinary spring-sown Wheat and a crop of autumn-sown Sensation Wheat, which might have served to renew his seed next year. But that loss is too problematical and too remote. At the same time I must say that a farmer who buys seed at 50 per cent. above the market price of ordinary Wheat, though he may have no legal claim for problematical losses, might reasonably expect an enterprising and experienced grower and seller like Mr. Marsters to exercise greater diligence. He would expect him to select such a high-priced Wheat from fields where he saw the young plants springing up vigorously and regularly in the drills—where no blight came to injure the ears—where the Wheat was cut dry and did not remain too long in the shocks. He would expect him to see that the Wheat did not smoke in the stack, that it did not heat in the granary, and that it was well cleaned and sifted, and kept free from damp. If in this way young Wheat had been selected, and watched by Mr. Marsters from the cradle until the grave was prepared for it as farmers used to do, he would not have had 40 or 50 complaints last year. Greater care would be advantageous to him as well as to the farmer and smaller holder. These three together might bring back to the corn-lands the agricultural smile.

There will be judgment for the plaintiff in the claim for £1 7s. 6d., but without costs. There would be judgment for the defendant on the counter claim for £17 10s., with costs on Scale C.

WHAT IS A GARDENER?

THE Duke of Bedford, who was represented by his agent, was summoned before Mr. Marsham, at Bow Street Police Court, on the 3rd inst., for employing five male servants without having proper licences for them. Mr. Pickford supported the summons on behalf of the London County Council. Mr. Bodkin appeared for the defendant.

Mr. Pickford stated that the five men in question were employed as gardeners by the Duke of Bedford, their duties being to attend to Bedford Square Gardens, Ridgmount Street Gardens, and a number of spaces at the end of houses on the Bedford estates. There were shrubs, plants, and flowers in the gardens, and he (the counsel) maintained that the men who looked after them were gardeners or under-gardeners, and therefore came within the Act.

George Beck, foreman of the men referred to, said he was employed by the Duke of Bedford, and was paid a salary of £2 a week. One of the other men received 32s., and the others 30s. a week. At one time he was a farm labourer, and was afterwards employed by a cheesemonger. He had worked on the Bedford estate for many years. He looked after the gardens, kept the grass cut, and in the spring planted Pelargoniums (Geraniums) and Stocks. Although he could do that, he did not regard himself as a skilled gardener, and would not take charge of a gentleman's garden even if he had the opportunity.

Mr. Bodkin: Of course you can plant a Geranium the right way up? (Laughter.)

The Witness: Certainly.

But you don't propagate flowers?—No, we get the Geraniums every spring from a firm in Covent Garden. There are only a few Geraniums round the edges.

In reply to the magistrate, the witness said he formerly sowed the seeds of annuals, but he had not done so for more than twelve months past.

Mr. Bodkin: Is there a man in this court who has not at some time or another sown mustard and cress in a box, or even on a piece of wet flannel? That does not make him a gardener.

Mr. Bodkin went on to say that the Duke of Bedford disputed this matter, because it was of some importance both to him and owners of property throughout the country who maintained open spaces. A man who worked in a garden was not necessarily a gardener, and the men in question simply did rough work which did not bring them within the Act. They only put in flowers which had been grown by someone else, and it could not in any sense be said that these gardens were places in which flowers were cultivated. The men were not attached to any establishment; they were not skilled men, and they were only paid the wages received by labourers in London.

Mr. Marsham: One of them received £100 a year. That is not a labourer's wage.

Mr. Bodkin. The Duke of Bedford, being a large employer of labour, pays wages quite up to the standard, and the man you refer to is a kind of foreman.

Mr. James Weston Marchant, chief clerk in the Bedford estate office, stated that about 130 dozen Geraniums were planted in the gardens in question every year, and he ordered them. Nothing was propagated in the gardens. When a shrub died it was replaced by another one. A labourer's wage in London was 7d. an hour. This was the first time the Duke of Bedford had been asked to pay a tax for the men employed to keep the square gardens in order.

Mr. Bodkin: Have you considered the advisability in the event of these men being taxed of employing lady gardeners?

The Witness: I think it will be worth consideration.

The case was adjourned.

On the 10th inst. Mr. Marsham delivered a considered judgment. He said that since the last hearing he had visited the gardens, and was impressed by the beautiful array of flowers. He came to the conclusion that the foreman Beck was a gardener within the meaning of the Act. He had some doubt about the other man, whose wages were 32s. a week, but with regard to the other three men they were, in his opinion, not gardeners, but men who worked in a garden. In regard to the foreman, he imposed a penalty of 20s., which would include the cost of the licence, 15s. It was intimated that there might be an appeal.

GARDENING APPOINTMENTS.

Mr. JOHN T. LIDSTERS, 18½ years as General Foreman at West Riding Asylum, Wakefield, has now been appointed as Gardener and Superintendent at the same place.

Mr. T. RUSSELL, for the last 3 years Inside Foreman at Downside, Leatherhead, and previously a Journeyman in the Royal Gardens, Windsor, as Gardener to J. M. CARR LLOYD, Esq., Lancing Manor, Lancing, Sussex. (Thanks for 2s. received for R.G.O.F. box.—Eds.)

Mr. G. PHILLIPS, for 9 years Gardener to VERNON J. WAYNE, Esq., as Gardener to the Honourable Henry B. PORTMAN, Buxted Park, Sussex.

Mr. F. PAGE, for 12 months Gardener to ELMER SPEED, Esq., Knowlton Court, near Dover, as Gardener to J. E. A. GWYNNE, Esq., Folkington Manor, Polegate, Sussex.

Mr. JAMES WATSON, for the past 4 years and 9 months Foreman at Cullen House, Cullen, N.B., and previously at Keir Gardens, Dunblane, N.B., as Gardener to ARTHUR HEYWOOD, Esq., Glevring Park, Wickham Market, Suffolk.

Mr. A. HAMMOND, for past 18 months employed in Messrs. J. VEITCH & SONS Nursery, Kings Road, Chelsea, and previously for 4 years Gardener to H. C. BENTLEY, Esq., Nithsdale, Market Harboro, as Gardener to MALCOLM BOWICK, Esq., Brockfield Hall, near York.

Mr. A. WILLIAMS, for the past 3 years Gardener to JOSTAUNTUN, Esq., Widney Manor, Warwickshire, as Gardener to H. SCHWARZ, Esq., Avon Carrow, Avon Dassett, Warwickshire.

Mr. C. T. B. CLARK, previously Foreman at Leigh Park, Havant, as Gardener to Colonel BOVD, Crofton House, Titchfield, Fareham. (Thanks for contribution of 2s. to R.G.O.F. box.—Eds.)

Mr. G. MALIN, late Gardener to R. WILLIS, Esq., Ashfield Arnold, Notts, as Gardener to A. E. HAWLEY, Esq., Leicester Grange, Hinckley.

THE WEATHER.

THE FOLLOWING SUMMARY RECORD of the weather throughout the British Islands, for the week ending August 6, is furnished from the Meteorological Office:—

GENERAL OBSERVATIONS.

The weather.—At the beginning of the week the weather over England was mostly fair and dry, with a temperature differing but little from the average. In Ireland and Scotland the conditions were less settled, and on Tuesday rain extended to all parts of the Kingdom, the remainder of the week being cool and very changeable. Thunderstorms occurred in many parts of the country on the 3rd and 4th, and again in several English districts on the 5th, and were in many instances accompanied by heavy falls of rain and hail.

The temperature was below the average in most of the western and southern districts, as well as in the Midland Counties. In the eastern parts of Great Britain and in Scotland W. it agreed very closely with the normal, while in Scotland N. it was above the average. In the northern, eastern and central districts the highest readings were registered very generally at the commencement of the week, but in the west and south-west they occurred more commonly in the latter half of the period. In England N.W. and S.W. the thermometer did not reach 70°, but in most other districts it exceeded that level, and in the Midland Counties (at Raunds) it rose to 76°. At Sumburgh Head a reading as high as 82° is reported to have occurred on Saturday. The lowest readings, which were experienced at various times in the different districts, ranged from 87° at Scotland E. (at Balmoral) to 47° in England E. and to 53° in the English Channel. The lowest grass temperatures reported were 32° at Sheffield, 34° at Balmoral, and 35° at Birmingham and Markree Castle.

The rainfall varied considerably in amount in different localities. In most of the western and southern districts and in Scotland E. it was in excess of the average, but elsewhere there was a fairly general deficit. More than an inch was reported at Scilly and in the south-eastern parts of Ireland on the 1st (as much as 1·8 in. at Waterford), and at a few places in the north of Scotland and the south-east of England on the 5th; on the last-mentioned occasion heavy hailstorms occurred in some parts of our eastern and southern counties.

The bright sunshine amounted to more than the average in the eastern and central parts of England and in the northern parts of Ireland and Scotland. Elsewhere there was a slight deficiency. The percentage of the possible duration ranged from 51 in England E. and 47 in the English Channel to 25 in Scotland E. and W.

THE WEATHER IN WEST HERTS.

Week ending August 10.

A cool and gloomy week.—The day temperatures, with one exception, have remained low for the time of year, but on the other hand there have occurred only two cold nights. On the coldest of these two nights, however, the exposed thermometer indicated a reading within 7° of the freezing point. Both at 1 and 2 feet deep the ground is now about 1 degree colder than is seasonable. Rain fell on four days, but the total measurement amounted to less than half-an-inch. With the exception of a few drops of rainwater which passed through the bare-soil gauge on three days both the percolation gauges have been quite dry. The record of bright sunshine proved very poor, averaging only 3½ hours a day; or nearly 2½ hours a day short of a seasonable duration. On the first day of the week the sun shone brightly for 10 hours, whereas, during the last two days, less than an hour's sunshine was altogether recorded. Calms and light airs have alone prevailed, and for the last two days the direction has been exclusively some northerly point. The mean amount of moisture in the air at 3 o'clock in the afternoon exceeded a seasonable quantity for that hour by as much as 13 per cent.

Weather in July.—It was stated (p. viii.) in the heading to the remarks on the month of July that it was the coldest July for 22 years, but the mean temperature of July, 1907, was, I find, slightly lower than in that of the present year. E. M., Berkhamsted, August 10 1910.

CATALOGUES RECEIVED.

BULBS.

AUSTIN & McASLAN, 89, Mitchell Street, Glasgow.
T. METHVEN & SONS, 15, Princes Street, Edinburgh.
W. M. BULL & SONS, King Street, Chelsea.
THOMAS KENNEDY & CO., Dumfries.
DICKSONS, Chester.
CLIBRANS, Altrincham and Manchester.
JOHN REED & SON, West Norwood, London.
COOPER, TABER & CO., 90 & 92, Southwark Street, London—wholesale.
TYNEDSIDE SEED STORES, LTD., 65, Clayton Street, Newcastle-on-Tyne.
DAVID W. THOMSON, 113, George Street, Edinburgh.

MISCELLANEOUS.

H. CANNELL & SONS, Swanley, Kent—Strawberries.
WELLCOME CHEMICAL RESEARCH LABORATORIES, King Street, London—Exhibits at the Japan-British Exhibition, including Botanical and Materia Medica Specimens, with Descriptions.

FOREIGN.

HAAGE & SCHMIDT, Erfurt, Germany—Bulbous and other Plants.
E. H. KRELAG & SON, Haarlem, Holland—Bulbs.
WILLY MULLER, Nocera Inferiore, Italy—Bulbs and Roots.

SCHEDULE RECEIVED.

The Sheffield Chrysanthemum Society will hold its annual shows in the Corn Exchange, Sheffield, on Friday and Saturday, September 16, 17, and Friday and Saturday, November 11, 12. Secretary, Mr. C. Cook, City Road, Sheffield.

MARKETS.

COVENT GARDEN, August 10.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in one day.—Eds.]

Cut Flowers, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Alströmmeria, p. dz. bunches	2 0	3 0	Lilium lancifolium album	1 6	2 0
Asters (Chinese), per dz. bunches	3 0	4 0	Lily of the Valley, p. dz. bunches	6 0	9 0
Carnations, p. doz. blooms, best	1 0	2 0	extra quality	10 0	15 0
American varieties	1 0	2 0	Marguerites, p. dz. bunches white	2 0	3 0
— smaller, per doz. bunches	9 0	—	— yellow	1 0	2 0
— Carola, special	2 0	2 6	Mignonette, per dozen bunches	1 0	2 0
— second size	1 0	1 6	Myosotis, per dz. bunches	2 0	3 0
Cattleyas, per doz. blooms	12 0	15 0	Odonoglossum crispum, per dozen blooms	2 6	3 0
Centaurea cyanus, per dz. bunches	0 9	1 0	Pelargoniums, show, per doz. bunches	3 0	—
— suaveolens, per dozen bunches	3 0	4 0	— Zonal, double scarlet	3 0	4 0
Coreopsis, p. doz. bunches	1 6	—	Roses, 12 blooms, Niphetos	0 9	1 6
Cornflowers, white and pink	1 6	2 0	— Bridesmaid	1 0	1 6
Delphiniums, per dozen bunches	4 0	5 0	— C. Testout	0 9	1 6
Eucharis grandiflora, per dozen blooms	1 6	2 0	— Kaiserin A. Victoria	1 0	1 6
Gaillardia, p. doz. bunches	1 6	2 0	— Capt. Hayward	1 0	2 0
Gardenias, pr. doz.	1 6	2 0	— C. Mermet	1 0	1 6
Gladiolus, Colvillei "The Bride," per dozen bunches	3 0	4 0	— Liberty	1 0	1 6
Gypsophila elegans, p. dz. bunches	3 0	4 0	— Mme. Chatenay	1 0	2 0
— paniculata	4 0	5 0	— Richmond	1 0	1 6
Lapagerias, white, per dozen	2 0	2 6	— The Bride	1 0	2 0
Lilium auratum, per bunch	3 0	3 6	— Varius H.P.'s	2 0	4 0
— longiflorum	1 6	2 0	Stephanotis, 72 "pips"	1 0	1 3
— lancifolium rubrum	2 6	—	Statice, blue, p. dz. bunches	4 0	5 0
			Stocks, per dozen bunches	2 0	4 0
			Sweet Peas, per dozen bunches	1 0	1 6
			Tuberose, per gross	3 0	—
			— per doz. blooms	0 4	0 6

Cut Foliage, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Adiantum cuneatum, per dozen bunches	4 0	6 0	Hardy foliage (various), per dozen bunches	3 0	5 0
Asparagus plumosus, long trails, per doz. bunches	3 0	6 0	Ivy-leaves, bronze	2 0	2 6
— medium, doz. bunches	12 0	15 0	— long trails per bundle	1 0	1 6
— Sprenger	6 0	9 0	— short green, per dozen bunches	1 0	2 0
Croton leaves, per dozen bunches	9 0	12 0	Moss, per gross	4 0	5 0
Cycas leaves, each	1 0	2 0	Myrtle, dz. bchs. (English), small-leaved	4 0	6 0
Ferns, per dozen bunches (English)	4 0	—	— French	1 0	1 6
— (French)	6 0	—	Smilax, per dozen trails	2 0	3 0

Plants in Pots, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Aralia Sieboldii, p. dozen	5 0	8 0	Ficus elastica, per dozen	8 0	—
— larger specimens	9 0	12 0	— repens, per dz.	6 0	8 0
— Moseri	6 0	8 0	Fuchsias, per dz.	4 0	6 0
— larger plants	12 0	18 0	— standards, each	1 2	2 6
Araucaria excelsa, per dozen	12 0	30 0	Grevilleas, per dz.	3 0	5 0
— large plants, each	3 6	5 0	Heliotrope, per dz.	4 0	5 0
Aspidistras, p. dz., green	15 0	24 0	Hydrangeas hortensis, per doz.	9 0	12 0
— variegated	30 0	42 0	— paniculata grandiflora	9 0	12 0
Asparagus plumosus nanus, per dozen	9 0	12 0	Isoetes, per dozen	4 0	6 0
— Sprenger	9 0	12 0	Kentia Belmoreana, per dozen	18 0	24 0
— tenuissimus	9 0	12 0	— Fosteriana, per dozen	18 0	30 0
Campanulas, per dozen	5 0	6 0	Latania borbonica, per dozen	15 0	21 0
Cocos Weddelliana, per dozen	18 0	30 0	Lilium longiflorum, per dz.	12 0	15 0
Coleus, per doz.	2 0	3 0	— lancifolium, p. dozen	9 0	10 0
Crotons, per dozen	9 0	12 0	— martagon per dozen	8 0	10 0
Cyperus alternifolius, per doz.	4 0	5 0	Marguerites, white, per dozen	5 0	6 0
— laxis, per doz.	4 0	5 0	— double yellow	4 0	6 0
Euonymus, per dz., in pots	3 0	8 0	Mignonette, per dozen	4 0	6 0
— from the ground	3 0	6 0	Pelargoniums (show), per doz.	5 0	6 0
Ferns, in thin bbs., per 100	8 0	12 0	— Ivy leaved, per dozen	4 0	6 0
— in small and large 60's	12 0	20 0	— Zonal	3 0	4 0
— in 48's, per doz.	4 0	6 0	Selaginella, p. doz.	4 0	6 0
— choicer sorts	8 0	12 0	Verbena, per doz.	4 0	6 0
— in 32's, per dz.	10 0	18 0			

Fruit: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Apples (English):			Greengages (Spanish & Italian), per box	1 6	2 6
— Keswick Codlin	1 3	2 0	— per ½ sieve	8 0	10 0
— Mr. Gladstone	3 0	3 9	— per round	3 0	3 3
— Beauty of Bath	3 0	4 6	Lemons:		
— Ecklinville, ½ bushel	1 6	2 6	— Messina (150)	6 0	6 6
— Julien, ½ bushel	1 9	2 0	— Naples (420)	21 0	—
— (Tasmanian), per case	—	—	— selected	25 0	—
— Scarlet Nonpareil	11 6	12 6	— Murcia (30)	10 0	—
— Scarlet Pearmain	12 0	—	— large	12 6	—
— Sturmer Pippin	14 0	—	Melons (English):		
— French Crab	10 6	—	— (Guersey)	0 9	1 6
— Five Crowns	11 0	11 6	— (French, Cantaloupe, each)	2 0	3 0
Apricots (French), ½ bushel	5 0	8 0	— (Spanish), netted, per case	—	—
Bananas, bunch:			— 24's	7 6	8 6
— Doubles	11 0	12 0	— 36's	8 0	9 6
— No. 1	9 0	—	Nectarines, dozen:		
— Extra	10 0	—	— selected	8 0	10 0
— Giant	12 0	15 0	— seconds	4 0	6 0
— Red coloured	4 0	5 6	Nuts, Almonds, p. bag	36 0	42 0
— Red Doubles	8 0	9 0	— Brazil, new, per cwt.	48 0	—
— Loose, p. doz.	0 6	1 0	— sorted	55 0	—
Cherries (English and French), per ½ sieve:			— Barcelona, per bag	32 0	34 0
— Florence	8 0	10 0	— Cocoa nuts, 100	10 0	14 0
— May Duke	9 0	10 0	— Walnuts, pickling, per bushel	7 0	—
— Bigarreau Napoleon, p. peck	5 0	12 0	Oranges—		
— Bigarreau	2 6	4 0	— Natal Navel per case	13 0	16 0
Currants (French and English), per ½ sieve:			— Dama, per case (420)	20 0	25 0
— Black	8 0	9 0	— (714) selected	24 0	26 0
— Red	3 6	5 0	— Murcia (200)	16 0	18 0
— pecks	1 9	2 6	— (300)	18 0	20 0
Figs, per dozen	2 6	6 0	Peaches (English), per doz.	10 0	—
— (Italian), box	2 6	—	— seconds	4 0	6 0
Grape Fruit, case:			Pineapples, each	2 0	5 0
— 36's	—	—	— (Florida), per case, 30, 36	16 6	20 0
— 40's	20 0	—	Plums (English), ½ sieve:		
— 64's	—	—	— Rivers	4 0	4 3
— 54's	—	—	— Early Kents	4 0	4 6
Grapes (English), per lb.	0 10	1 0	— green, ½ bushel	3 0	4 0
— Alicante	—	—	Raspberries (English), handle	1 0	1 6
— Madresfield Court	2 6	3 6	— per cwt.	17 0	—
— Muscats	1 0	1 9	— (Scotch), per dozen punnets	6 0	—
— Canon Hall	2 6	4 0	Tangerines (Naarjes), per box	1 6	4 0
Grapes, per lb.:					
— Hambro	0 8	1 0			
— Colmar	1 3	1 6			
— Belgian Hambro	0 9	1 0			

Vegetables: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Artichokes (Globe), per dozen	1 6	2 0	Mint, per dozen bunches	2 0	—
Aubergines, doz.	1 6	2 0	Mushrooms, p. lb.	0 10	1 0
Beans (English and Chan. Islands), per lb.	0 4	0 6	— broilers	0 9	—
— Broad (French), per pad	2 6	3 6	Mustard and Cress, per dozen pun.	0 6	0 8
— per packet	0 4	0 6	Onions (spring), dz. bunches	2 0	3 0
Broad Beans (English), per bus.	1 9	2 0	— Egyptian, bags	5 0	5 6
Cabbages, tally	3 0	4 6	— New Spanish, case	4 0	5 6
Carrots (English), dozen bunches	1 0	1 6	Parsley, pr. doz.	2 0	3 0
— (French), per dozen bunches	4 0	5 0	Peas (French), per pad	4 6	5 0
Cauliflowers, hamper (24-30)	4 0	6 0	— Middlesex, per bushel	3 6	4 6
— per doz. large	3 0	—	— bags	6 0	8 0
— Dutch, p. crate	3 6	—	Potatoes (Channel Islands), per cwt.	7 0	—
Cucumbers, per flat	5 6	6 0	Radishes (English), p. doz. bunches	1 0	1 6
Endive, per dozen	1 3	2 0	Stachys tuberosa, per lb.	0 4	0 5
Greens, Spring, bag	1 0	—	Tomatoes—		
— Herbs (sweet), packets, per gross	7 0	—	— (English), per dozen lbs.	2 9	—
Horseradish, foreign, new, per bundle	1 6	2 0	— small selected	2 6	2 9
— 12 bunches	18 0	24 0	— seconds	1 6	—
Lettuce (English), per bushel	0 9	1 6	— (Guernsey), per dozen lbs.	2 0	—
— hamper	2 0	3 0	— (Spanish), per case "Flats"	6 0	—
— Cos, per dozen	1 0	—	— Plums	10 0	11 0
— (French), Cos, per dozen	1 6	2 0	Turnips, 12 bchs.	4 0	—
Marrows, per tally	2 0	2 6	— (French)	4 0	5 0

REMARKS.—English Apples are arriving in slightly increased quantities; the quality of the fruits is not particularly good. Supplies of Plums from Kent are only moderate; they are realising satisfactory prices. Large consignments of foreign Peas are being received, but not many are in a ripe condition. Red Currants still realise good prices. The Grape trade is only fair, but there is an improvement in the demand for Pines and Bananas. Spanish Gages are arriving in a fine condition, and are selling freely. The prices for home grown Tomatoes are a little higher. E. H. R., Covent Garden, August 10, 1910.

New Potatoes.

	per cwt.	s.d.		per cwt.	s.d.
Kents—			Bedfords—		
Sharpe's Express	3 3	3 6	Epicure	2 9	2 9
Eclipse	3 3	3 6	May Queen	2 9	3 3
Epicure	2 9	3 3	Lincolns—		
May Queen	3 0	3 3	Sharpe's Express	3 0	3 3
Bedfords—			Epicure	2 9	3 0
Eclipse	3 0	3 3	Blacklands	2 6	2 9

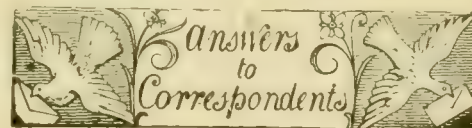
REMARKS.—Trade is still very bad, and there is little demand for tubers. Edward J. Newborn, Covent Garden and St. Pancras, August 10, 1910.

COVENT GARDEN FLOWER MARKET.

Garden flowers are abundant. Roses are plentiful, and, generally, of good quality. The finest blooms with long stems make fairly good returns, but many consignments have to be cleared at prices which can give very little profit to the growers. I have been asked why prices given in the list above are often in excess of what the flowers may be bought for in the streets. The hawkers in some cases pay the full market value, but usually they clear out surplus stocks at reduced prices and are thus enabled to undersell the florist. Gladiolus the Bride is still procurable, and there are spikes of the hybrid G. gandavensis. Gypsophila paniculata is at its best condition. The double-flowered variety will be seen a little later on. Double-flowered white Stocks are good. Sweet Peas are abundant, but the quality of the blooms varies considerably. Centaurea cyanus (Cornflower) and Centaurea suaveolens (Sweet Sultan) are procurable. At this season of the year there are considerable quantities of cut flowers wasted owing to there being no purchasers.

POT PLANTS.

Few plants will be required by the florists for the next month or six weeks. Many stands are empty, and the salesmen are away on holiday. Some growers send supplies all the year round, but it is doubtful if it pays them to market plants now, except for country orders. A. H. Covent Garden, August 10, 1910.



* * * The Editors will be glad to receive, for consideration, large photographs of horticultural subjects, suitable for reproduction as Supplementary Illustrations in this Journal.

ADDRESSES: J. P. M. Latour-Marliac, Temple-sur-Lot, France.—W. M. D. We cannot trace the address of such a firm.

ALMUG OR ALGUM TREES: H. J. C. According to Grindon in his *Scripture Botany*, the name Almug* is transcribed without change from the original of the Old Testament, and is not a Hebrew one, but an Indian, corresponding in origin with the Hebrew names of apes, peacocks, and ivory. The tree is indigenous to the mountainous parts of the Indian Peninsula, especially Mysore and parts of Coimbatore and North Canara, in the Madras Presidency, north and north-west of the Neigherry Hills. It grows in dry and open places, not in forests, often in hedgerows, and attains the height of 20 feet or 30 feet, and a circumference of nearly a yard, the branches forming a beautiful spherical head. The leaves are opposite, ovate, pointed, entire, and bright green; the flowers resemble those of the Persian Lilac, and are clustered in much the same manner, but in colour are buff or yellowish, changing with age into deep purple; the fruits, when quite ripe, resemble small black Cherries.

ASTERS DISEASED: E. F. The plants are attacked by a fungus (Rhizoctinia) on the "collars." Water them with a solution of sulphate of potash.

BEGONIA LEAVES: J. C. The trouble is not due to disease, but results from an excess of water at the roots, combined with too much moisture in the atmosphere. Afford an increased amount of ventilation.

CLEMATIS: B. L. The sudden failure of Clematis plants is not usually due to disease, but to a more or less imperfect union between stock and scion. In such circumstances no harm would ensue from planting another plant in the same spot. (See also p. 92 in the last issue.)

EXHIBITION: W. V. G. The specimens were not exactly alike. If you wish to have them properly named, we must ask you to forward us fresh specimens, not only of the flowers, but also of the foliage of each plant.

GOOSEBERRY MILDEW: R. H. B. The mildew is only the common European form, which is not injurious to any great extent. There are no signs of the American mildew.

GRAPES: W. S., Richmond. A species of Botrytis has attacked the Grapes. Give increased ventilation in the vinery early in the day.

GRAVELLING GARDEN PATHS: E. W. S. There is no necessity to remove the ashes unless the addition of the gravel is likely to raise the paths too much above the level of the surrounding ground. Under any circumstances,

* This name is applied in the Old Testament to Santalum album, the Sandal Wood Tree.

the surface must be loosened, and the paths reformed and rolled before gravel is applied, otherwise the result will not be satisfactory. You must not think that the substitution of gravel for ashes will prevent the surface of the walks from picking up after a frost or a slight rain, unless special preventive measures are taken. Generally speaking, there are only two conditions which obviate this difficulty. The surface of a path must either be impervious to moisture, or so porous that it passes through it at once. The use of asphalt or cement secures the first condition; a clean, non-binding gravel the second. You do not state the kind of gravel you purpose using. Whatever kind it may be, it will be as well to screen it, using the coarser material for the bottom and the finer for the top. Roll the bottom layer well before applying the fine gravel, and afterwards give whole a good rolling. If you use a crushed limestone gravel, apply water while the fine portion is being rolled, as this will make it cohere better and more quickly. If you do not object to having loose gravel on the surface, a dressing of Bideford (Pea) gravel will assist in keeping the surface from picking up after rain or during a thaw. In forming the paths, be sure and give a good camber—not less than 1 in 60—so that the rain may be carried to the sides. Unless you have some very special reason for doing so, we would advise you not to put on the gravel thicker than 2½ in. to 3 in., as this is ample for any ordinary garden path.

HELLEBORE: A. C. B. The injury is caused by the unfavourable season. No disease is present.

LAVENDER WITH MALFORMED GROWTHS: Laverder. There is no disease present in the shoots. The most probable cause of the trouble is the unfavourable autumn of last year, the shoots being sappy and tender in consequence. Give the plants some stimulant, applying liquid manure at intervals.

"MOSS" ON LAWN: H. B. The plant infesting your lawn is not a Moss, but one of the flowering plants. It is a *Cerastium*, or a closely-allied plant, the specimen being too withered for accurate identification. If you apply some nitrogenous manure, it will cause the grass to grow luxuriously, and in time crowd out the weed. Mix, say, nitrate of soda, or sulphate of ammonia, with fine soil, and apply it as a top-dressing. Lawn sand will have the same effect.

NAMES OF FRUITS: J. O. Edwards. Peaches: 1, Dymond; 2, Stirling Castle; 3, Early York; 4, Violette Hâtive.

NAME OF PLANTS: James John Foster. *Coton-easter* Nummularia.—*Stort*. 1, *Cratægus mollis*; 2, *Liquidamba styraciflua*; 3, *Morus nigra* (Mulberry); 4, *Ginkgo biloba* (Maidenhair Tree); 5, *Sequoia sempervirens* (Redwood); 6, *Pyrus Aria* (Whitebeam); 7, *Olearia Haastii*.—*H. F., Ruthin.* *Cistus ladaniferus*, Gum cistus.—*R. S. Q.* 1, *Campanula* (too withered for identification of species); 2, *Draccephalum argenteum*; 3, *Campanula carpatica* variety; 4, *Mimulus cupreus* probably; 5, *Campanula carpatica turbinata*; 6, *Veronica subsessilis*; 7, *Sedum grandiflorum*.—*Correspondent*. 1, *Codiaeum (Croton) chrysophyllum*; 2, *C. Weissmannii*; 3, *C. Evansianum*; 4, *C. angustifolium*; 5, *C. variegatum*; 6, *Ananassa sativa variegata* (variegated Pine Apple plant); 7, *Kochia scoparia*.—*W. H. S.* *Dendrobium crystallinum*.—*H. H.* 1, *Pteris longifolia*; 2, *Lomaria nuda*; 3, *Cheilanthes elegans*; 4, *Notholaena chrysophylla*; 5, *Pteris arguta*; 6, *Blechnum brasiliense*.—*R. P. Bushey*. 1, *Cypripedium conspicuum* (*Harrisianum* × *villosum*); 2, *Cypripedium Savagaeum* (*Spicerianum* × *Harrisianum*); 3, *Cattleya elongata* (*Alexandrae*); 4, *C. Feuillatii* (*Leopoldii* × *superba*); 5, *C. superba*.—*O. R.* 1, *Cattleya luteola*; 2, *Ada aurantiaca*; 3, *Odontoglossum blandum*; 4, *Cochlidium vulcanica*.—*W. S.* *Veratrum nigrum*.—*W. B.* *Cattleya guttata*; its value is only that of an ordinary garden Orchid.

NECTARINE WITH CRACKED SKIN: G. H. There is no disease present. The trouble is due to keeping the temperature of the house too low. Next season, afford a little extra warmth when the fruits are swelling, and attend to the stopping, tying, and training of the shoots at the proper time.

NOTICE TO TERMINATE EMPLOYMENT: A. B. It is usual for a head gardener to give or receive

one month's notice to leave. If your employer could prove the allegation he has made, you could not claim the usual notice.

PEACH WATERLOO: A. G. It is characteristic of this variety to be woolly and of poor flavour, but it is not likely to be so good even as usual in this unfavourable season. In some districts the variety comes better than in others. The cracking of the fruit is caused by excessive moisture, but Waterloo is peculiarly subject to this trouble, its skin being very thin, and when ripe it will hardly stand handling. The fruits should be gathered and used as soon as they are ripe, as they do not remain long in good condition. The variety Hale's Early does not ripen quite so early as Waterloo, but it is far more reliable and of better flavour. You would do well to substitute the one for the other.

PELARGONIUMS WITH YELLOW FOLIAGE: S. A. B. and J. P. Neither fungus nor insect pest has caused the leaves to turn yellow, which is due solely to the unfavourable weather.

PHLOX COQUELICOT AND ASPHODELUS LUTEUS. B. L. In many soils and localities *Phlox Coque-* licot develops swollen or gouty stems, a probable outcome of rupture to the sap vessels from some cause undetermined. It appears to be the more liable to this condition after division of the clumps, and when growing in heavy or wet soils. To prevent this trouble the variety should be raised from cuttings periodically, planting the cuttings out directly they are well rooted. In some instances the failing referred to has caused the variety to be discarded, and Flambeau has been substituted for it. We have not found *Asphodelus luteus* difficult to flower when grown in moderately light soils. The plant, however, needs some time to become well established.

PLANTS ATTACKED AT THE ROOTS: F. J. The roots are infested with eelworms. The best plan is to use entirely fresh soil, sterilising (by baking) that which is infested with eel-worm. Sulphate of potash applied to the soil is to be recommended, and any of the ground insecticides, such as vaporite or apterite.

PROLIFEROUS ROSE: W. J. W., Ltd. The blooms exhibit proliferation. For some reason, not determined, the central axis, instead of terminating in the flower, continues to develop. The abnormality is common in Roses.

RASPBERRIES FAILING: Rubus. The trouble is due to unfavourable soil conditions. No disease is present. You should not employ gas lime unless the land is fallow, first ascertaining by means of an analysis if this material will be beneficial. From your description of the ground, we suspect it requires a good dressing of farmyard manure.

RED SPIDER ON VINES: A. H. It is not safe at this stage to subject your vines to excessive sulphur treatment. The better way to deal with them now is to carefully sponge the leaves with weak, soft-soapy water, with a little sulphur added. This will keep the pest in check until the crop is cleared, when the foliage should be drenched several times at intervals of a few days with the same mixture, used in greater strength. It is a good plan to sprinkle sulphur on the pipes several times during the growing season, as a preventive measure. You must also clean the rods thoroughly after the winter pruning.

SHOWER AND WEDDING BOUQUETS: W. A. W. During August there is an abundant supply of suitable flowers for making all kinds of wedding bouquets. Among the most useful are Roses, especially such varieties as Madame Abel Chatenay, President Carnot, Sunset, Sunrise, Liberty, and the Wichuraiana type, which selection will be found most suitable for shower bouquets. The sprays, however, should be cut before the flowers are fully open, as if this is not done the trusses are round at the top and heavy. There are also border and Perpetual-flowering Carnations in great number and variety. The best are Fairmaid, Winsor, Mayday, and Britannia (scarlet). White Perfection is very suitable for a bridal bouquet. Lily of the Valley and *Odontoglossum crispum* or *O. Pescatorei* can also be obtained during this

season, and are specially useful for mixing with Carnation White Perfection or other large, white flowers for wedding bouquets. The flowers enumerated are suitable for the making of costly bouquets, but hardy flowers, including annuals, provide good material for bouquets throughout August. Some of the most suitable are small side pieces of *Delphinium* with *Nigella* Miss Jekyll, and *Gypsophila paniculata*. *Gypsophila* should be used sparingly, and in small sprays, as, although so light in itself, too much of it "kills" the other subjects in a bouquet or any other floral design. Iceland Poppies, with grasses and a few small flowers of herbaceous Sunflowers used below them, or still better, some *Coreopsis grandiflora*, form an attractive scheme. *Cactus Dahlias* may be used either alone, or, if the bronze and yellow varieties are used, a few spikes of *Montbretia* may be added. Endless other combinations, such as *Scabiosa caucasica* with mauve Sweet Peas and *Gypsophila*, or Sweet Peas with their buds and a few light points of their own foliage, and perhaps a mere suspicion of *Gypsophila*, will readily suggest themselves to anyone who has a good herbaceous or annual garden to draw upon. All the above suggestions can be added to by the judicious mixture of a few sprays of brown or autumnal foliage, or *Asparagus plumosus* or *A. Sprengeri*, but *Adiantum* Fern should be avoided, as it does not last well, and moreover, although beautiful on the plant, it has a very stiff and formal effect. The ordinary type of shower bouquet is not to be recommended as it hangs too low; the three-quarter shape bouquet, with a few flowers, buds, and sprays of foliage depending, is to be preferred. This form of bouquet is held most conveniently about the level of the elbow, and this creates an effect both above and below the waist. A bouquet now in fashion is one which can be held over the arm and not in the hand. As to the method of fixing the wires; do not adopt the usual method of wiring flowers and sticking them into moss pads. It is far better to make the bouquet entirely in the hand, binding the flowers firmly into position, working a light foundation of foliage into it as the work proceeds. To bring about the semi-shower or three-quarter effect, the lower flowers and sprays of foliage and buds will have to be pulled over so that they entirely cover the hand of the person carrying it. You will find much information on the subject in a book just published by Messrs. Adam & Charles Black, entitled "British Floral Decorations," by Mr. R. F. Felton, reviewed in *Gardeners' Chronicle*, June 18, p. 399.

TOMATOS DISEASED: Anxious. The plants are *Verbena* is attacked by *Peronospora effusa*. diseased plants, and soak the soil of the entire house with a solution of sulphate of potash.—*W. S. F.* The plants are attacked by *Cladosporium fulvum*. Bordeaux Mixture alone will arrest its progress.

TURF TURNING BROWN: F. M. N. The trouble is caused by a fungus which is present in the roots of the grass. Soak the diseased patches thoroughly with a solution of sulphate of iron, using 1 lb. to 1½ gallons of water.

VERBENA AND MYRTLE DISEASED: G. G. The *Verbena* is attacked by *Peronospora effusa*. Spray the plants early in the season with liver of sulphur, using ½ oz. in two gallons of water. The fungus *Cladosporium* is present on the Myrtle, which should be sprayed with the same specific as the *Verbenas*. *A Text-book of Plant Diseases*, by George Massee, will be suitable for your purpose.

"YELLOWING" IN LEAVES: Wessex. Sickly, yellow foliage is very common in the case of trees and shrubs this season, owing to the unfavourable weather. In addition to the manures you mention, try the effect of some nitrogenous compound.

Communications Received.—S. L.—Sir F. C.—J. S.—G. E. S.—W. L.—W. T.—W. J. M.—J. K.—Mrs. D.—J. P. (Carlisle).—T. & Co., Ltd.—W. P. B.—A. H. (Cromer).—W. and T. S.—W. A.—A. C.—A. W.—J. J.—F. H.—A. C. & Sons, Ltd.—H. A. J.—Grower.—A. J. H.—H. S. T.—W. J. V.—C. F.—H. H. W.—F. E. B.—J. D. G.—E. H. J.—J. T.—W. P. J.—W. W.—H. M.—W. T.—D. Ltd.—W. L.—A. B.—P. & Co.—T. B.—A. L.—Rev. J. J.—H. S. T.—H. J.—W. W.—R. H. B.—J. MoA.—T. & Co.



Photograph by H. N. King.

CLANDON PARK, SURREY, THE RESIDENCE OF THE EARL OF ONSLOW.

THE

Gardeners' Chronicle

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THE GENUS EREMURUS.

(See Supplementary Illustration.)

THE Editors have asked me to write an account of this genus to accompany the illustration which was taken in my garden early in June this year by Mr. Gerald Strickland. To revise the genus from a botanical point of view would be beyond my power, for it is evident that the characters on which botanists have relied to separate the supposed species in this genus are so variable in cultivation that, without a much better knowledge than we have of them in a wild state, I should only become lost in a maze of difficulties. Baker, in his revision of the genera and species of *Anthericæ* and *EriospERMÆ* [*Linn. Journ. Bot.*, vol. xv., 1876], recognised 18 species, and in the *Index Kewensis*, 1893, about 10 more are catalogued. But for horticultural purposes, it seems to me that not more than five or six at present in cultivation are of importance in ordinary gardens, and these have in the last few years become most popular plants, on account of their striking habit and easy cultivation.

The *Eremuri* are found in Western and Central Asia, often at considerable elevations, and in grassy steppes, where the season of vegetation is very short, and where the heat of summer and the cold of winter are very great; but, notwithstanding the difference of climate, they seem to grow well in all but the wettest parts of Great Britain, and, provided

that the ground is well drained, they do not require to be lifted annually.

Their root-system is very peculiar, consisting of a stout central axis, from which a number of thick, fleshy roots radiate like the arms of a starfish in a horizontal plane. These roots are long and easily broken, and in lifting the plants from the ground care must be taken to begin at a good distance from the crown and to undermine the whole plant before taking it up, as the roots often extend 2 or 3 feet horizontally. As a new crown and a new series of roots are formed annually on the top of the old ones, it is necessary to lift, divide and re-plant every two, or at most three, years, and I find that the roots may be kept dry without injury, and in wet autumns with advantage, for two or three months, from about the beginning of August till the middle of October. The principal cultural difficulty that must be guarded against is the tendency of the plants, especially *E. robustus* and **Elwesii*, to grow early in spring, at a time when rain and severe frosts are usual, and, though the thick, fleshy leaves will endure 10° to 15° of frost in March and April without much injury, yet, if water lodges and freezes at the base of the leaves, the young flower-spike is certain to be damaged, and often destroyed. Therefore, it is a good plan to cover the crown at night with a flower-pot or handlight as late as possible, and to place the plants in a situation where they are protected, by a wall or by a thick hedge, from the morning sun.

This is not so necessary in the case of the narrow-leaved, yellow-flowered species which are later in growth, but some of these require a warmer and drier position, and do not flower and seed as freely as those of the *robustus* section. I have planted and seen *Eremuri* growing well among shrubs, but though the shelter is good for them in spring, they cannot in such situations be lifted without much trouble, and the shade of shrubs around them is bad in summer. Therefore, I prefer to grow them in a bed by themselves, and do not find them particular as to soil, though, from their remarkable vigour on chalk and limestone soils, I suppose that lime is congenial to them. They may be easily raised from seed, though it ripens slowly, and, in wet summers, most of the capsules fall off without maturing. I sow the seed in pans as soon as ripe, and keep the pans in a frame for a year or two, when the young plants may be planted out in a frame or in the open border. Three to five years is required before the seedlings flower, and there is a good deal of variation in colour and size among them.

The best known of the thick-leaved species are as follows:—*E. himalaicus* Baker, has small, white flowers and a spike 5 to 8 feet or more high, which has a tendency to bend over, and often requires staking.

E. robustus was described and introduced from Turkestan by Regel about 1875, and has become a common plant in our gardens. A form of it was, I believe, first raised or noticed by Max Leichtlin, and called by him *Elwesianus*, and this was later figured in the *Jardin du Crest* by Micheli, and described by him as *E. Elwesii* in the *Revue Horticole*, p. 280 (1897). This has thicker and broader leaves, and, in the first plant which was sent to me by

* Printed in Supplementary Illustration as *E. robustus Elwesianus*.

Max Leichtlin, the flower-spike was earlier, shorter, and had the flowers extending much lower down the stem than in *robustus*, which, in addition to its larger individual flowers, makes it, from a horticultural point of view, distinct from and better than *robustus*.

But the seedlings which I have raised from *Elwesii* do not always show these characters, and a great majority of the plants now in cultivation and commonly sold under the name of *Elwesianus* are hardly, if at all, distinct from *robustus*.

The white form of it, which has been raised in some quantity by myself and in the garden of M. Philippe de Vilmorin at Verrières, is a very fine plant, much superior in vigour and size of flower to *E. himalaicus*.

Beside these, I have a form which I call *tardiflora*, which, for horticultural purposes, is very distinct from either; partly by its leaves, which are narrower and more upright, but principally because it is at least a month later; and this peculiarity not only saves it from damage by spring frost, but extends the flowering season until the yellow-flowered species come in. I cannot tell whether this is a chance seedling in my garden, or how I got it, but I showed it at the Holland House Show in July four years ago, when the Committee wished to see it again.

I brought up three fine spikes two years later, when all the *robustus* and *Elwesianus* in my garden were long over, and was told that, in the opinion of the Committee, it was not distinct from *robustus*. But this is not the opinion of those who really know *Eremuri*, and in the Supplementary Illustration some spikes of this may be seen peeping out over my shoulder; did not flower till a month later than the group, which is composed principally of *Elwesii* and *Elwesii albus*.

After these come the yellow-flowered species which are grown under the following names: *E. Bungei* Baker = *aurantiacus* Baker from Afghanistan, and *Olgæ Regel* from Turkistan. There are hybrids or seedlings from them known as *Warei*, *Isabellinum*, *Shelfordii*, *Sir Michael*, &c., which vary in colour between pale yellow, puce and pink, and which will, sooner or later, have to be treated as florist flowers, as they vary too much to be treated as species, even if their parentage or origin were correctly known.

What florists should aim at in improving these plants are shorter stems, larger and less-crowded flowers, clearer and brighter colours and a late-flowering habit. I see no reason why we should not obtain in course of time as great an improvement in the yellows and pinks as we have in the white *Elwesii* over the original *himalaicus*.

But, taken as we see them now, they are about the most stately and attractive of all hardy plants in the early summer, and though expensive to purchase at present, will soon become more abundant. *H. J. Elwes, Colesborne*.

HYBRID JAVANESE RHODODENDRONS.

THE members of this section are remarkable among *Rhododendrons*, from the fact that instead of the flowering period being limited to any particular season, it extends over the entire year.

The persistent flowering qualities just noted are influenced by the style of growth, as directly a cluster of blossoms is over, at whatever season it may be, a new shoot is pushed out, which

gradually develops and forms a flower-bud at the apex. This, in the ordinary course of events, expands, be the season winter or summer.

Considering that the original species, whence these garden varieties have sprung, are all natives of islands in the Malayan Archipelago, one would almost expect them to require a stove temperature for their successful culture. They, however, occur only in the more elevated and, consequently, cooler regions. Such being the case, a warm greenhouse—that is, one in which the thermometer during the winter ranges from 50° to 60°—is sufficient to meet their requirements.

As far as cultural matters are concerned, these Rhododendrons are not at all difficult to strike from cuttings, although some of the weaker varieties make more shapely plants when grafted on to the stronger-growing forms than when increased in this way. The cuttings must be put into well-drained pots of sandy peat, and kept in a close propagating case in a warm house, and shaded from the sun till rooted.

In potting Rhododendrons of this class, it must be borne in mind that their parents are, for the most part, epiphytes, and, consequently, a compost made up of fibrous peat and sand is better for them than a mixture containing loam. Thorough drainage, too, is very essential, for a free supply of water is needed, and, at the same time, stagnant moisture is very injurious.

In fine weather the syringe may be used freely, as a dry atmosphere is inimical to the welfare of the plants, leading, as it does, to the foliage being attacked by thrips. With care, however, in this respect, insect pests give very little trouble.

As befitting a race of Rhododendrons raised at the Royal Exotic Nurseries, Chelsea, well within the London area, the members of this group are but little affected by the sulphur-laden fogs too often experienced in winter throughout the London district. Certainly few, if any, greenhouse plants are as little injured as they.

Among the different varieties composing a group I saw recently at one of the shows, the following were particularly noticeable:—Amabile, blush pink; Clorinda, deep rose; Exquisite, a pleasing shade of fawn yellow; jasminiflorum carminatum, rich carmine, having the tubular flowers and habit of the original R. jasminiflorum; Imogene, buff yellow; King Edward VII., large, bold trusses of bright-yellow flowers; Lord Wolseley, deep-orange yellow; luteo-roseum, a combination of rose and yellow, forming a peculiar yet pleasing tint; President, buff-yellow, tinged with rose; Primrose, pure primrose-yellow; Purity, white; Souvenir de J. H. Mangles, orange, suffused with pink; and Thetis, a distinct shade of light yellow. B.

POLEMONIUM CARNEUM.

THIS distinct Polemonium illustrated in fig. 49 is a native of California, whence seeds were received by Mr. Stein, Island of Islay, Scotland, some fifty years ago. Its correct name was unknown, and it was grown and known under the name of "California" till two years ago, when specimens were sent to Kew for identification. It turned out to be *P. carneum*, a native of mountain woods, Siskiyou Co., California. Branching freely the plants grow 1 foot to 3 feet high, but not so stiffly erect as the well-known *P. coeruleum*. The leaflets are ovate or oblong-lanceolate, 1½ inches long, whilst the branches are somewhat umbellately 3 to 5 flowered. The flowers are of good size, salmon colour or flesh colour (fading to purple), and are very freely produced for nearly two months in May and June. It is a very attractive plant, quite hardy and easily grown, but preferring a partially shady position. The plant illustrated is growing in a shady part of the rock garden, where it is exposed only to the morning sun. Seeds are produced freely, and it seems somewhat strange that such a good and distinct plant should have remained obscure for so long. W. I.

THE BULB GARDEN.

GLADIOLUS SAUNDERSII.

THIS Gladiolus is now a superb sight in the garden, a clump with about 40 flower-spikes producing a most brilliant effect, with its vivid colouring. It was introduced into this country from South Africa in 1871, but, though it has been known for nearly 40 years, it is an extremely rare plant in gardens. One reason for the neglect it has experienced is probably that, its habitat being South Africa, it is thought to be too tender for culture in the open air. As a matter of fact, however, it appears perfectly hardy, for, though my plants have never received the slightest protection, they come up stronger every year, and they have increased greatly in number. It is also a wonderfully vigorous grower for a Gladiolus, the spikes attaining a height of 3 feet 6 inches, and the blossoms, three of which are fully expanded on a spike at the same time, are strikingly handsome. They are of a light, bright scarlet colour, and the three lower petals have each a white centre, which is liberally spotted with vermilion. The upper petal is lance-shaped,



[Photograph by W. Irving.]

FIG. 49.—POLEMONIUM CARNEUM FLOWERING ON A ROCKERY.

and inclines slightly forward, whilst the side petals are much reflexed, and the expanded blossoms measure rather over 3 inches across. If, however, the petals are stretched out to their fullest extent, the flower will measure 6 inches in diameter. Considering its hardiness, its beauty, and the highly-ornamental qualities of the flowers, it seems a great pity that this Gladiolus is not more generally grown, as in the south, at all events, it should succeed well and increase in beauty year by year. It is most valuable for indoor decoration, the flower-spikes lasting for over a week in perfection, and a tall vase with a dozen or more of them makes a lovely and bright picture. Here we find it a far more reliable plant than *G. princeps*, which was described as perfectly hardy when first sent out. In the south-west, *G. princeps* is a very bad doer, continually dying out, and its culture has, on that account, been discontinued in many gardens. *G. Saundersii*, on the contrary, always flowers magnificently, so that it can be strongly recommended to take the place of *G. princeps* where that plant does not succeed. Wyndham Fitzherbert, Kingswear, Devonshire.

FORESTRY.

THE ROYAL SCHOOL OF FORESTRY AT EBERSWALDE.

THE Eberswalde School of Forestry is one of the most important institutions of its kind in the world, as it is the special training ground of the Prussian forest officer. It may not be the most important, as there is a sister college in Münden, near Hanover, which is devoted to the same purpose, but the former institution is probably better known to foreigners on account of its nearness to Berlin, and the great amount of experimental work which is carried on there. Eberswalde itself is an unimpressive mixture of market village and manufacturing town, with residential outskirts, the 25,000 inhabitants being for the most part engaged in the sawmills, paperworks, and other factories which usually spring up around a town that lies in the centre of a woodland and agricultural district. The surroundings, however, make up for any lack of beauty in the town itself.

The old school was given up some 30 years ago on account of lack of space, and the present

structure was erected specially for its present purpose. It cannot be looked upon as imposing, being more or less box-like, but the lecture rooms and collections are well worth a visit. There are four lecture halls, each capable of accommodating some 50 to 60 students, but as the number of scholars rarely exceeds 60, and these are divided into various sections according to the time they have been at the college, there is never any fear of overcrowding. The collections include sylvicultural instruments for the measuring, cutting and transportation of wood, &c.—altogether over 2,000 different exhibits. These are forestry implements proper, but in addition there are magnificent collections of chemicals, minerals (over 20,000), surveying and physical instruments, botanical specimens, and animals and insects indigenous to Germany. The rooms are open to the students at most hours of the day, and they are of great value for teaching purposes. One of the chief difficulties in English forestry schools lies in the fact that there is generally no good ground for demonstration purposes within easy reach of the institutions where forestry is taught, but Eberswalde is surrounded by four State forests with a total area

of over 40,000 acres, so that no difficulty is experienced in this respect.

The botanic garden is small, being only about 3 acres, but it fully satisfies the purpose for which it was established, namely, for a collection of indigenous forest trees and the more important shrubs. The lectures begin in summer at 8 a.m., and continue at intervals until 1 p.m. The afternoons are generally free, although the first-year student must devote one whole afternoon in each week to land-surveying demonstrations in the open, and, as he has to prepare charts of the surveyed land, at least two or three afternoons in the week are thus occupied. Saturdays are generally devoted to excursions in the woods, and, occasionally, afternoons are spent in the same way. In winter, the lectures begin for the most part at 9 a.m., although on some days they begin as early as 8 o'clock. On the average, two afternoons a week are devoted to other lectures or demonstrations. The average number of hours per week devoted to study in the college itself is about 24. In the third and sixth terms, that is to say, the two terms previous to the first and second examinations, the student is more or less free for the whole day, as the lectures are so arranged that the bulk of them can be heard in the first two terms, only two or three series of a more practical nature remaining as a kind of finishing polish. The number of professors and teachers employed is 14, those concerned with the forestry subjects proper being all practical men, in fact the directors of the neighbouring forests, whilst the others, without exception, are men of undoubted ability.

The students are divided into two classes, known as students proper and hospitants. The students take the full course and sit for the examinations, whilst the hospitants are generally men who wish to specialise, or who only want to hear a few lectures. The charges are 15s. entrance fee, and £3 10s. per term of half a year for the students, and 10s. entrance fee and 10s. per series of lectures for hospitants. Foreigners are required to pay double fees.

The college is by no means self-supporting, and a large grant is necessary to defray expenses. The cost of living in the town varies considerably; in the college prospectus the average, for a young man of moderate tastes, is given at £7 10s. per month. It may be that this information is given to prevent the extravagant son from demanding too much from his parents, but, on the average, the amount spent considerably exceeds the sum mentioned, mainly on account of the fact that forestry in Germany is one of the most exclusive of occupations, so that only persons of means are able to pursue it. G. W.

THE ALPINE GARDEN.

PENTSTEMON AZUREUS.

THIS is one of the most interesting, if not charming, plants in this genus for the Alpine or rock-garden. The glaucous-green foliage forms a very effective setting to the clear azure-blue of the flowers, which are borne in spikes about 1 foot high. These delightful little plants are quite hardy, and they are easily propagated from cuttings inserted under a bell glass in May or June. They are also very useful for planting in the foreground of herbaceous borders, in groups of five or six plants.

ANTHEMIS AIZOON.

Among the many species of this genus there are few that can excel in beauty or usefulness A. Aizoon, especially for growing on rockeries or for edging purposes. When well grown, it soon forms a pretty carpet of silvery-grey foliage and produces numerous creamy-white flowers about 1 inch in diameter, borne on stems 6 to 9 inches long. This singularly beautiful plant delights in a well-drained, sandy soil, and it needs but very little moisture during the winter months. An occasional soaking with water when in bloom is beneficial. W. F. Glover, Langport.

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables and Summaries, ante, pp. 77-82.)
(Continued from page 118.)

5. SOUTHERN COUNTIES.

DORSETSHIRE.—This is the worst fruit season experienced in these gardens during the past 11 years. Cold north-west winds, with frequent hailstorms in the fourth week of April, and 6° of frost on April 27, destroyed the Pear and Plum blossom, also that of Withington Fillbasket, Bismarck, and a few other early-flowering Apples. On March 30 we experienced 10° of frost, which ruined the blossom of bush fruits, and I have never known such a complete failure of the Black Currant crop. On most bush Apple trees, we have a fair quantity of fruits, but there is a poor crop on trees in orchards. There are some Pears on trees against south walls, but in other aspects the Pear crop is practically a failure. Sweet Cherries have been a full crop, but Morellos are very scarce. Strawberries proved an average crop, but many of the berries were spoiled by the rains. Both Walnuts and Cobnuts are poor crops. T. Turton, Castle Gardens, Sherborne.

—There were early prospects for abundant crops of all fruits, but late frosts destroyed the blossom. Our sub-soil being chalk, the land is drier and more favoured during a cold spring than heavy soils. Apples are a fairly good crop, especially Striped Beefing, King of the Pippins, Keswick Codlin, Rival, Peasgood's Nonesuch, and Reinette de Canada. Of Pears, we have an abundant crop, especially on trees of Le Lœtier, Beurré Diel, Glou Moreau, Josephine de Malines, Seckle, and Doyenné du Comice, &c. Plums are very poor, but Morello Cherries are good. Currants and Gooseberries also are good, with the exception of Black Currants, which promised a heavy crop, but the late frosts destroyed most of them. Strawberries have been a fair crop, but the berries were not so large as usual, the first flowers being destroyed by cold. Thos. Denny, Down House Gardens, Blandford.

—Pears, in the case of wall trees, are carrying good crops, the fruits being very clean and free from spots. Plums are so abundant on wall trees, they require to be thinned. Pyramid and espalier Apple and Pear trees in the open garden produced a fine show of blossom, but the trees have poor crops. This I attribute to the cold, sunless season of last year, the wood failing to ripen. Most of our trees are netted to protect them from frost when in bloom. Constant attention is given to spraying the trees both in winter and summer, and this year especially I have noticed an absence of insect pests. The soil is a deep, adhesive loam, lying on chalk. A. J. Rogers, Langton Gardens, Blandford.

—Currants and Raspberries are very heavy crops, and Gooseberries are a good crop, except where birds attacked the buds. The fruit blossom suffered much injury from cold winds, and there was a scarcity of blossom, which I attribute to the sunless season of last year. Strawberries furnished a splendid crop, the fruits being some of the finest I have ever seen. Our soil is light in texture, the sub-soil being green sand on chalk. F. Olver, Minterne, Dorset.

HAMPSHIRE.—Apple trees generally blossomed well, and the fruits appeared to set, but they dropped freely later. The most promising varieties are Bramley's Seedling, Worcester Pearmain, Peasgood's Nonesuch, Lord Grosvenor, and Mère de Menage. The Apple trees are specially healthy. The Plum crop was injured by frost. Gooseberries are a heavy crop, as they usually are here. I have known but one failure in 30 years. Quite recently, a bad case of Gooseberry-mildew occurred within two miles of these gardens, without any apparent reason. Strawberries were again a very heavy crop, and the quality of the fruit was good. Royal Sovereign is still the best variety, although The Laxton runs it very close. I never saw Potatoes more promising; the haulm is especially luxuriant, and the yield of tubers is heavy. E. Molyneux, Swanmore Park, Bishop's Waltham, Hants.

—The wet, sunless season of last year is responsible for unripened wood, and to this I attribute the scarcity of hardy fruits this year. The trees, generally, were laden with blossom, and looked very promising, but the flowers were

weak, and soon fell. Apples are very scarce, many trees not having a fruit on them. There are also few Pears, whilst Apricots and Plums are both light crops. Gooseberries and Raspberries are the best amongst small fruits. There are no Black Currants, owing to spring frosts. Red Currants are only a partial crop. Strawberries are under the average; the first flowers were destroyed by frost, and the continued wet weather caused many berries to rot. A. G. Nichols, Strathfieldsaye Gardens, Mortimer, R.S.O.

—Apple and Pear trees flowered well, but frost and hail in May destroyed the greater part of the blossom. Plums did not flower very abundantly. Our soil is light and gravelly, and rests on clay. R. Learmouth, Sherfield Manor Gardens, Basingstoke.

—This is not a very good fruit district, but this season is the worst I have known for the past 14 years. Peaches and Nectarines were destroyed by the late frosts. Currants always crop well here. Strawberries were extra good, but the wet weather spoiled the late fruits. The soil is a heavy loam with a yellow clay subsoil. Henry Martin, Bartley Lodge Gardens, Cadnam, Southampton.

—We had a splendid show of fruit at blossoming time, but the late frosts ruined the crops. All small fruits, such as Gooseberries, Red and Black Currants and Strawberries, produced large crops, but many fruits were spoiled by the wet weather. All fruits trees are very clean this year. The soil is of a sandy loam, in which all kinds of fruit trees do well. R. G. Onslow, Dogmersfield Park Gardens, Winchester.

—The fruit crops are the worst I have known here during the past six years. Apple trees in orchards produced no flowers, and we have only a medium crop of fruit on trained trees. This I attribute to the absence of sunshine last summer. Pears flowered well, but on unprotected trees the fruits were spoilt by spring frosts. Plums are satisfactory only on wall trees. Red and Black Currants are failures through frost when the bushes were in flower, but Gooseberries, being protected at the time from bullfinches by netting, and being in nearly full leafage, escaped much injury. Our soil is marl over chalk. E. Henderson, Stratton Gardens, Micheldever.

—Apples generally are very scarce in this district, but Pears are a good average crop, and we have an abundance of all bush fruits. The soil is a medium to heavy loam, with a clay and flint sub-soil. The gardens are situated 470 feet above sea level. A. W. Blake, The Castle Gardens, Highbury, Newbury.

—The fruit crops this season are the most unfavourable for a number of years past, and especially with regard to Apples and Pears. There was a good show of blossom; the chief cause of failure I attribute partly to frost, 7° being registered in the second week in May, also to north and north-east winds. The weather was very dry at the time the trees were in flower, otherwise much more damage would have been caused. Strawberries which promised well, were damaged, first by frost and later by excessive wet and cold. Gooseberries, although not so plentiful as last year, are a good average crop. Black and White Currants, also Raspberries and Loganberries are very good crops. The gardens are well protected by trees, although the altitude is 290 feet. Our soil is a sandy loam, resting on sand. A. G. Shadbolt, Blackmore Gardens, West Liss.

KENT.—Apples set well, but from various causes the young fruits dropped in large quantities when about the size of Walnuts. Pears are almost a total failure, the only variety carrying even a half-crop is Durondeau, which is generally very good here. The Plum and Damson crops are almost total failures. Cherries dropped in great numbers, and the fruits cracked badly. The Peach and Nectarine crops in the open are about half the average. The trees have made excellent growths, and have been very free from blight, having been sprayed with "Medela." G. Woodward, Barham Court Gardens, Teston.

—The general failure of the hardy fruit crops is due to unripened wood, the trouble being accentuated by low temperatures at the time the trees were in flower. George Bunyard, Maidstone.

—The hardy fruit crops are very poor. Apples, Pears, Plums, and Sweet Cherries are all

scarce. Morello Cherries are good. Gooseberries are unsatisfactory, but Raspberries are very fair. Strawberries were a heavy crop. Our soil is principally chalk. *J. T. Shann, Betts-hanger Park Gardens, Eastry, Dover.*

— All fruit trees bloomed freely, but, owing to cold winds, the fruit did not set. We have a wall planted on both sides with Plums; on one side the trees are laden with fruits, on the other they are barren. Strawberries were an extra large crop, but, owing to wet weather, many of the berries were spoilt. *J. G. Weston, Eastwell Park Gardens, Ashford.*

— There is a very good crop of Gascoyne's Scarlet Seedling Apple, as the trees, blooming rather late, escaped the spring frosts. This is often the case with this variety. An orchard, half a mile away from my garden, and 200 feet above sea level, has scarcely any Apples or fruit of any kind. *Charles E. Shea, The Elms, Foots Cray.*

MIDDLESEX.—The fruit crops, generally, are much below the average. We have good crops of Peaches on a south wall, but on west walls they are a failure. Apples are very scarce, owing principally to the wood not ripening last autumn. Pears are a fairly good crop. Strawberries were excellent, but the flavour was deficient, and the berries were soon over. Raspberries are the most

with quassia extract. Black Currants are scarce, but Red Currants are very good. Many Gooseberries were damaged by frost. Our soil is a light loam, overlying gravel. *James Hawkes, Osterley Park Gardens, Isleworth.*

SURREY.—The fruit crops are very disappointing, albeit the prospects in early spring were extra good. Severe frosts on May 9, 10, and 11 destroyed the blossom. Even the shoots of Apricot and Pear trees were damaged, many spurs being killed. Apples are under the average; what fruits we have are mostly on bush trees. The Queen, Fearn's Pippin, Cellini, Allington, Pippin, King of the Pippins, Lane's Prince Albert, Lord Grosvenor, Keswick Codlin, James Grieve, Grenadier, Lady Sudeley, and Worcester Pearmain are the most satisfactory. Plums are a light crop; the best varieties are Jefferson, Monarch, Victoria, and Pond's Seedling. Cherries are an average crop, but, owing to wet, the dessert varieties split badly. Morello Cherries promise well. Strawberries were over the average, but inferior in quality. Royal Sovereign was the best variety. The soil here is a medium to light loam, with a gravel sub-soil. *George Kent, Norbury Park Gardens, Dorking.*

— The hardy fruit crops are much below the average. Apple and Pear trees produced little bloom, and, in addition, birds were particu-

good quality; Raspberries an average crop of fair quality. Some kinds of Plum trees had very little blossom, whilst others flowered freely, but more than half the fruit turned yellow and quite small, and dropped off. Apples also varied greatly in blossoming. The blossom set fairly well on a few varieties, but failed to set on others, or, though it set, the fruit dropped largely. On the whole, we have about half an average crop of Apples; Pears are almost a total failure, in spite of profuse blossoming; Cherries are a quarter of a crop; Nuts also are much below the average. *William E. Bear, Magham Down, Hailsham.*

— The crops of Apples and Pears in orchards are very light, which I attribute to excessive wet on our heavy, cold soil, together with low temperatures at flowering time. The trees are making splendid growth. Bush and cordon trees in the garden have satisfactory crops, and the fruit promises to be of excellent quality. Many varieties of Apples and Pears have been thinned of their fruits. Cherries are an average crop, but the fruit is not so good as last season. Black Currants and Raspberries are both excellent. Strawberries have been very good, but the weather was too wet when they were ripening. *W. A. Cook, Leonardlee Gardens, Horsham, Sussex.*

— The prospects in early spring were favourable for a good crop of Apples, but late frosts and a severe hailstorm destroyed many of the fruits. Plums, Pears and Cherries were all damaged by cold weather. The Cherry trees were heavy with blossom, but the fruits nearly all fell as soon as they had set. Black and Red Currants, in one or two gardens in this locality, were much damaged by a heavy hailstorm, but in other gardens they are plentiful and good. Gooseberries, where the buds were protected from birds, are excellent. Strawberries have been plentiful and very good in quality, the varieties Royal Sovereign and Waterloo being of exceptionally good flavour. Plums and Pears are best on wall trees and Apples on bushes. Our soil is a very stiff clay, and, in consequence, is wet and cold in rainy seasons. *Wm. J. Langridge, Ote Hall Gardens, Burgess Hill.*

WILTSHIRE.—Apple trees bloomed well, but the fruits set badly, so that the crop is a very indifferent one. Pear trees carried but little bloom, but what few fruits developed are very good. Plums promise well, although silverleaf disease is becoming prevalent. Cherries are not much grown in this district. Small fruits are later in ripening this year, but they are very good in quality. Strawberries have been plentiful and of fair quality, considering the absence of sunshine. Our soil is mainly of a calcareous nature and shallow. *W. Gullick, Nurseryman, Salisbury.*

(To be continued.)



FIG. 50.—GRAPE CANON HALL MUSCAT, AS GROWN IN GUERNSEY FOR THE LONDON MARKET.
(See p. 137.)

satisfactory among small fruits. Some Plum trees on walls are bearing well, others are lightly cropped. The bad fruit year may be attributed to three causes, (1) Unmature wood, (2) cold and frosty weather when the trees were in bloom, and (3) a sudden rise of temperature after the fruits had set. Our soil is light and gravelly. *H. Markham, Wrotham Park Gardens, Barnet.*

— Pears generally are a very light crop, but the variety Hesse is quite up to the average. Plums vary considerably; some trees of Victoria have very good crops, but, on the whole, Plums are under the average. The most evenly cropped variety is Monarch. Belle du Louvain is also very fair. *W. Poupart, Marsh Farm, Twickenham.*

— There was plenty of blossom on all Apple and Pear trees, but east winds, accompanied by sharp frosts at night-time, destroyed the flowers. Pears on walls, such as Pitmaston Duchess and Marguerite Marrillat, are satisfactory. The following varieties of Apples are carrying good crops:—Lane's Prince Albert, Allington Pippin, and Worcester Pearmain. Strawberries have been a heavy crop, but many of the best fruits were spoiled by the wet and sunless weather. The best varieties were Royal Sovereign, Reward, Givon's Late Prolific, and Epicure, a fine new variety resembling Reward. Peaches on walls are a failure; the trees were badly infested with aphids, although repeatedly syringed

larly destructive to the flower-buds, biting them off and making the branches appear as though trimmed with a knife or scissors. *W. H. Honess, Hopdene Gardens, Holmby St. Mary, Dorking.*

— We have average crops of good fruit. Bush fruits, where not protected by wire netting, were attacked by bullfinches. Strawberries have been abundant. The Bedford, Bedford Champion, Reward, Givon's Late Prolific, and Laxton's Latest are all desirable varieties. Leader I consider the most suitable for our soil, and the berries ripen as early as Royal Sovereign. The soil is a heavy, weald clay; very wet, and difficult to work in spring and early summer. *James Watt, Mynthurst Gardens, Reigate.*

— The Pear, Apple, Peach, Nectarine, and Apricot crops were affected by spring frosts, which caused many of the fruits to drop. Raspberries are a very heavy crop, and Strawberries have been plentiful, although heavy storms and lack of sunshine caused many of the berries to rot. Gooseberries are under the average. Red Currants are good, but Black Currants are very scarce. Our soil is of a light, sandy nature. *Jas. Lock, Oatlands Lodge Gardens, Weybridge.*

SUSSEX.—Gooseberries, in spite of many fruits dropping in consequence of frost, are an average crop of fair quality; Red Currants are a full crop of fair quality; Black Currants are half a crop of

NOTICES OF BOOKS.

SUMMER FLOWERS OF THE HIGH ALPS.*

A NICELY-GOT-UP book this, but probably not intended to be taken as a companion to the Alps. The author has some pleasantly-written remarks on the subject of Alpine plants in general, contrasting them with the flora of the Lowlands, but refrains from the exaggerated depreciation of the latter that may be met with too often in works of this sort. We wish we could praise the coloured illustrations. Some are good, e.g., that of *Viola biflora* and *Dryas octopetala*. But the tints of the majority show up the defects of the process work more effectively than they portray the beauty of the originals. There are disagreeable tinges of blue where the flower only shows pink or carmine. It may be urged that the blue is there all the same in, for example, the Moss Campion (*silene acaulis*). Doubtless it is, but we are ordinarily incapable of seeing it, and could well let it pass. The letterpress accompanying the plates is rather slight, but we recognise the difficulty of hitting the happy mean between superficiality and abstruseness. The chief fault that we find with the author is on the ground of the subjects he

* By Somerville Hastings. Illustrated by reproductions from direct colour photography by the author. (London: Dent & Co.)

has chosen. Whilst some are admirable, others might well have been replaced by more interesting forms. The common Monkshood forms a picture neither artistic nor particularly successful from a technical standpoint. A good picture of *Androsace glacialis* or some other more characteristically Alpine plant might have replaced it with advantage.

PROFITABLE FRUIT GROWING.*

THE author, Mr John Wright, V.M.H., at one time editor of the *Journal of Horticulture*, has done good service to gardening by the publication of numerous works, such as *The Fruit Grower's Guide*, *Flower Grower's Guide*, *Vegetable Grower's Guide*, *Primer of Greenhouses and Window Plants*, *Mushrooms for the Million*, and others.

Mr. Wright does not overload his books with technical terms, and is therefore readily understood by the general reader. *Profitable Fruit Growing* is the ninth edition of an essay which was written for the Fruiterers' Company in 1889, when it gained a gold medal and £25, offered by the company for an essay not exceeding 20,000 words. It has been revised and enlarged, and we recommend it to the notice of cultivators of small holdings and allotments who may be desirous of adding to their knowledge of fruit culture and acquiring an idea of the principles underlying the art. It contains useful information on pinching the lateral shoots on Apples, Pears, Plums, &c., winter pruning, how and when trees should be planted, the varieties to be chosen, and the conditions which cultivators may hope to see remedied, such as obstructive land laws, ecclesiastical charges, high railway freight rates, market tolls, salesmen's exactions and shopkeepers' extortions, which at the present time are hindrances and impediments to the extension of the cultivation of hardy fruits in Great Britain. If these are swept away, fruits can be grown here as cheaply, and as good in quality, as anywhere else. Even under present conditions we are improving our fruit culture, and extending the areas under fruit. Cottagers, and small holders in general, should cultivate fruit as an adjunct to, but not as substitutes for, other crops, and they should destroy the worn-out and cankered trees and plant new orchards on the best land they possess.

The book is furnished with many useful diagrams and illustrations of methods of planting small areas, of good and improper pruning of trees, of the planting and subsequent treatment of Strawberries and Raspberries, and the gathering, storing, and packing of fruit for the market. The lists of Apples and Pears are good, but they contain only the names of the finest varieties; there are others which are suited for cold, exposed situations, or as shade trees in pastures.

GRAPE CANON HALL MUSCAT.

THIS variety is the handsomest of all Grapes, and it has the highest value in the market. Most gardeners, however, know how difficult it is to obtain a perfect set of berries, as the variety is a shy "setter," and from this cause the bunches are often of straggling and ungainly appearance. Those illustrated in figs. 50 and 51 were grown at the St. Stephen's Vineries, Guernsey, the weight of the single bunch being 6 lbs. The photographs were forwarded by Mr. Frank H. Sarchet, with the following note:—

"Enclosed are photographs of Canon Hall Muscat Grapes. I am sending them (1) because they are a good sample of that fine variety; (2) to disprove a belief common in England that we in Guernsey grow only a very poor quality Grape, such as is seen in quantities in the markets in September. The colour of the berries was deep golden-yellow, the bunches realising very satisfactory prices when sold in Covent Garden Market."

* *Profitable Fruit Growing*, by J. Wright, V.M.H. (London: W. H. and L. Collingridge.) 1s.

TREES AND SHRUBS.

OLEARIA VIRGATA AND O. RAMULOSA.

MR. GUMBLETON has just sent me a flower-spray of *Olearia virgata*, which he says is flowering with him in Co. Cork for the first and, he thinks, the last time. At first he was doubtful if it was an *Olearia*, but the name was confirmed at Kew. The flowers, which are very small, being only $\frac{1}{4}$ inch in diameter, are by no means showy, the centre being greenish-white, studded with yellow anthers, and surrounded by tiny, white ray-florets. The leaves are nearly an inch in length and about $\frac{1}{4}$ inch wide at the broadest part. It does not appear to be a very decorative shrub, and can certainly not compare for effect with such species as *O. Haastii*, *O. stellu-*

THE ROSARY.

ROSES ON THEIR OWN ROOTS.

THE excellent illustration of Caroline Testout which appeared on p. 97 has suggested the following notes. The question of growing Roses upon their own roots or otherwise is often a matter of variety or soil. Many varieties have not the same vigour as Caroline Testout, consequently they are budded on foster stocks. At the same time, there is some considerable advantage in having those Roses on their own roots which are known to succeed. More especially is this the case with inexperienced amateurs, for they are not then called upon to distinguish between the Rose and stock when strong shoots appear from the base. Then, again,

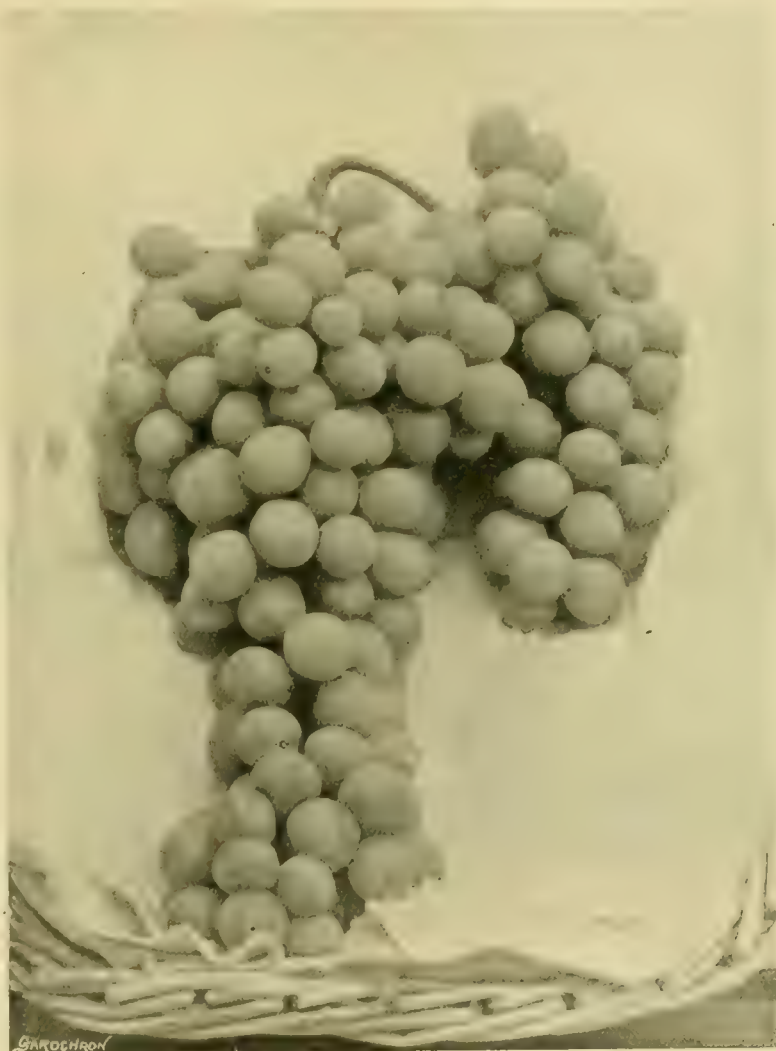


FIG. 51.—CANON HALL MUSCAT GRAPE.

lata, *O. nitida*, *O. macrodonta* and *O. insignis*. A plant was given to me last spring under the name of *O. ramulosa*, and now, though it is under 2 feet in height, has come into bloom. In appearance it is far superior to *O. virgata*, and bids fair to be a handsome shrub when it has attained good proportions. The narrow-petalled, white flowers are starry in shape, and are slightly over $\frac{1}{2}$ inch in diameter, and, if they are borne in quantity on large specimens, should produce a pretty effect. The leaves are very minute, being only about $\frac{1}{8}$ inch in length, and about half that width. They are of dark, polished green, and are thick and of great substance, while on the underside they are covered with a white felt-like substance. It is referred to in Nicholson's *Dictionary of Gardening*, but is, apparently, a rather rare plant in gardens. Wyndham Fitzherbert.

two seasons are saved in the increasing of stock, always provided the variety is one suitable for this form of culture. It takes one year to get a cutting stock of Manetti or Briar, and this has to be planted out and budded before it can become a maiden Rose plant in the following year. Thus, three years are needed before a plant is obtained. On the contrary, a cutting is a Rose plant as soon as it is rooted, and certain varieties will make fairly good bushes in the following year, corresponding to the time the Rose bud is being inserted in the stock. But a bud inserted in an established stock has the benefit of the roots possessed by that stock, and so frequently overtakes the cutting.

Cuttings are preferable in the case of Dorothy Perkins and most of the Hybrid Wichuraiana Roses. These naturally produce a great number of valuable suckers, and it is better these should

be all Rose suckers. They also root much freer than any Rose stock, not even excepting the Manetti. As a rule, it is the stronger growers which are suitable for own-root culture. Conrad F. Meyer and Frau Karl Druschki will root very freely indeed, and I prefer growing them in that manner. The China Roses are almost always increased in this manner; indeed, it would be difficult to procure buds of sufficient size to work upon stocks. Nor would there be any advantage in this, seeing that Roses of this class do better on their own roots. There are some Roses, however, that will not root from cuttings, notably the Scotch Briars. The old Cabbage, Moss, and Provence Roses are also difficult to increase in this way; but these types can readily be propagated by division of the suckers with a few roots attached, and this plan is adopted generally.

Now a word about the cutting itself. Provided you have fairly-ripened wood, any part of September is an excellent time to insert the cuttings. This allows of them, in many cases, making a few roots before winter. Wichuraianas are seldom ripe enough until October. The

plied to settle the soil well around them. A very sandy soil is best for this indoor propagation, and a compost consisting of half loam and half coarse sand has answered best in my own experience. *Grower.*

SCOTLAND.

THE LILY SEASON.

OWING to the exceedingly favourable atmospheric conditions, especially since the advent of the recent rains, the Lily season in south-western Scotland has been highly successful up to the present period. The first Lily to flower in my own garden this year was *L. davuricum*, a native of Siberia. The finest and most effective variety is the dark-hued *incomparabilis*, which is much more reliable and enduring than most of its contemporaries. It was followed by *L. monadelphum* var. *Szovitzianum*, a magnificent Lily, from Mount Caucasus and Northern Persia. It often approaches to the stature of *L. giganteum*, generally reaching a height of between 8 feet and 9 feet.

bilities most impressively in a peaty or fibrous soil, such as is suitable for the cultivation of *Rhododendrons* and *Azaleas*. Its largest and most strikingly effective varieties are *rubrovittatum*, *platyphyllum*, and the almost pure white *virginale*. The variety *virginale* is exceedingly beautiful, but in many situations it is not enduring. *David R. Williamson.*

CULTURAL MEMORANDA.

GREEN LAWNS.

WHATEVER may be our colour tastes, even if they incline specially to buff and brown, no one finds pleasure in looking on a brown lawn. Thanks to the wet season, grass has grown luxuriantly, and if the weather has damaged flowering plants, both trees and lawns have benefited, the former being especially clean in foliage and sturdy in growth. Though excessive moisture creates luxuriant growth, yet at the same time it gives rise to soil exhaustion, and when the time of stress shall come, as come inevitably it will—for we shall presently have hot, dry summers—then the exhaustion of the soil will be seen and felt all the more forcibly. Just now, whilst rains fall so abundantly, it would be unwise to add to lawns or greens any manurial elements, but these may well be added early in the ensuing spring, as no one can tell what the coming summer may be. If it is hot and parching, then great good will result to the grass if it has had the benefit of rich feeding, and the sward will retain its vigour and greenness all the longer under adverse conditions. On the contrary, impoverished lawns will become so burnt up as to be literally distressing to look upon. Too many who have lawns or greens under their charge forget that constant mowing means constant depletion of fertility, nothing being returned to compensate for the loss of the mown grass. Artificial manures do much good, but dressings which add something insoluble with them, such as fine soil, grit, sand, or a dressing of some substance such as native guano, are more helpful, because furnishing new material into which the grass can root. A danger in such case to be avoided is the adding of any soil-material that contains seeds of weeds. Because of this, ditch cleanings or roadside trimmings are to be avoided. Probably, the best material is found in sifted old pot soil, with basic slag added, though native guano used liberally may be used instead. *A. D.*

HARDY FLOWER BORDER.

ARGEMONE GRANDIFLORA.

THIS fine plant is a beautiful sight when in full flower. Its white blossoms, with their central cluster of golden anthers, are 4 inches across, and of dazzling purity. They bear a close resemblance to those of *Romneya Coulteri*, which are fully three weeks later in expanding. Those who are unable to grow the *Romneya* satisfactorily, will find a good substitute in *Argemone grandiflora*. It is a very old garden plant, having been known to Dioscorides more than 18 hundred years ago. It commences to bloom about the middle of June, and, if the seed pods are cut off as soon as they form, it continues to flower until the late autumn. A few years ago Mr. Archer-Hind had a splendid specimen in his garden that was 5 feet in height, had a circumference of 15 feet, and bore at least 50 expanded flowers. The blossoms last little longer than a day, but are produced in such profusion that their fading is unnoticed. The grey leaves are prickly, and are from 6 to 9 inches in length. Seeds are borne freely in pods liberally armed with prickles, and the seeds germinate readily. The *Argemone* is generally considered to be an annual, and is classed as one in Nicholson's *Dictionary of Gardening*; but with me it invariably throws up strongly from the base in the spring, and has done so for the past four years. The grey-green, spiny leaves associate charmingly with the pure white flowers, and the plant makes a pretty picture for many weeks. *Argemone grandiflora* was introduced into this country from Mexico in 1827; but, notwithstanding the many years that have elapsed since it was first brought into England, it is by no means common in gardens. *Wyndham Fitzherbert.*



[Photograph by A. J. Hartless.]

FIG. 52.—PORTION OF THE ROSE GARDEN AT KING'S WALDEN EURY.

propagator should take his cuttings of a length of about 9 inches, being certain to cut with a knife just below the bottom eye or bud. When making the cutting, the bottom leaves should be removed, and the cuttings should be inserted firmly in sandy loam. On no account add manure when rooting cuttings: the feeding must come later on, when the plants have been placed in their permanent quarters. It is advisable to put them rather closely in beds at first, as some of the cuttings may fail to strike. They should be planted sufficiently deep that 2 inches or so will be left above ground.

In making cuttings of Rose stocks, we remove the lower eyes to lessen the risk of suckers; but, in the case of rambling Roses, this is not done, because the sucker is one of the most valuable portions of the plant. Make each cutting very firm in the ground.

Many Teas and Noisettes are struck, under glass, from greener wood obtained from laterals, with a small "heel," or portion of the older wood, attached. Any length from 3 to 6 inches is suitable. A good plan is to keep the cuttings quite close for a time, and partially shaded in the house, after one good soaking has been ap-

This is a Lily which ought to be cultivated more extensively, if only for its noble appearance and the beauty of its pendulous, lemon-coloured flowers. This grand Lily usually takes at least two years to become established, and often succeeds best in a soil composed almost entirely of clay. It has grown here in the same half-shady situation for 15 years, and has given me less trouble than any other variety. Almost as much might be said with perfect expressiveness of *L. pardalinum*, the uniquely coloured Panther Lily of California, and especially of the variety entitled *L. Burbankii*, which I have found the most hardy and prolific of all. *L. Henryi*, which does not, in my estimation too greatly resemble the *speciosum* family, and assuredly has not their exquisite fragrance, has similar attributes of vigorous growth, floral luxuriance, and what may be termed enduring capability. That, at least, is the result of my experience, though I have been informed that it does not succeed so well in many other localities where it is cultivated with at least equal care. *L. Chalcedonicum*, the brilliantly-coloured "scarlet Martagon," also grows and flowers admirably in southern Scotland in ordinary garden loam. *L. auratum*, on the contrary, as a general rule, exhibits its capa-

ORCHID NOTES AND GLEANINGS.

SPATHOGLOTTIS SOUTHERIANA.

THIS pretty Australian species, described by F. M. Bailey in *Proc. Roy. Soc. Queensland XI.*, 1895, is in flower in Sir Trevor Lawrence's collection at Burford (gr. Mr. W. H. White). The flowers are borne on upright spikes, each being over an inch across and the pedicels and ovaries 2 inches long. The sepals and petals are light rose colour, the labellum, which has the side lobes as large as the middle lobe, a darker shade of rose, the base of the lip and the narrow isthmus being yellowish. The column is purplish rose. It has a general resemblance to *S. plicata*, but the flowers are smaller. The culture of *Spathoglottis* is similar to that of *Bletia*, and includes a cool, dry resting-season after growth and flowering are completed.

WARREA TRICOLOR.

THIS species, which is now rarely seen in gardens, is in flower with Sir Trevor Lawrence, Bart.

the margins being white. The lip, which is smaller than the other segments, is whitish, spotted and tinged with purple. *S. Lyonii* is a native of St. Annes, Jamaica, being found on the trunks of the trees on the hillside. It grows well if associated with the Mexican *Lælias*.

NOTES ON IRISES.

IRIS LÆVIGATA IN GUERNSEY.

THERE is a general opinion that *Iris lævigata*, or *Kämpferi*, is only suitable for culture as a sub-aquatic, and, in England, it is generally grown by the sides of streams and ponds, or in marshy ground. In Guernsey, it is grown in moist spots, but both Mr. Frank Lilley, of St. Pierre du Bois, and Mr. Chas. Blampied, of S. Martin, have this plant growing in quite dry situations. Mr. Lilley's plants are in a stiff loam, with a southern slope, but sheltered from the winter gales. Mr. Blampied has them on a somewhat sandy loam, open to the full south-west sun. Mr. Lilley keeps his plants thoroughly clean, and the soil is allowed to become rather

flowers measured 9 inches across. The colour is a bright, porcelain blue, with yellow flakes and white central veins—one of the brightest of these blues. Near by, was a bed of Mr. Lilley's *Rose Queen*, a good pinkish-rose colour, with a paler centre, toning off to white, and apparently very floriferous—a delicate-looking flower. Of the single-flowered Japanese varieties, *Taikon* and *Kuroki* were noticeable; they bore longer stems and very wide, round petals. *Kuroki* is of varied colours, of quite bizarre appearance, blotched and splashed with white, pink, purple, blue, and violet. *Taikon* has magenta-violet flowers, lined and blotched with purple. Viscount Hayashi is a good, new seedling, with very large, double flowers, of a rich, warm shade of violet and lined with paler colour. W. S. B.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

ASTER DIPLOSTEPHIODES.—The plant figured under this name in the *Gardeners' Chronicle*, July 23, p. 56, is certainly not the true species. It is evidently a form of *A. subcæruleus*, which has been doing duty in gardens for *A. diplostephioides* for many years. The true plant, figured in the *Botanical Magazine*, t. 6718, was raised from seed collected by Mr. Elwes in Sikkim, and plants were grown at Kew till the year 1895, when the species was probably lost to cultivation, as no further plants could be procured anywhere. It grew about 2 feet to 3 feet high, with softly-hairy leaves in a tuft at the base, but very few on the stem. The flowers are large, 3 inches in diameter, with violet-purple rays, whilst the disc is dark-purple or almost black, instead of yellow, as in *A. subcæruleus*. The plant figured on p. 56 has a more stiff and erect habit, while *A. diplostephioides* requires support for the flower-stems. Seeds of the true species were again received from Sikkim about two years ago, and plants flowered in the rock-garden during July of this year. W. I.

FRUIT AND FOREIGN IMPORTATIONS.—There is a note or two in *Southern Grower's* remarks (p. 93), which do not commend themselves to consumers of fruit who represent the greater portion of the community. Because both Black Currant and early Plums have come to us from France, in moderate quantities, *Southern Grower* is inclined to grumble at the importations. Yet, but for these, myriads of purchasers could not have obtained either Black Currants or Plums. What would have been *Southern Grower's* case had there been at home, as sometimes happens, heavy crops of these fruits? Then we should have heard a wail as to the miserable prices obtained. So long as a grower has fruit to sell, and he can, through general scarcity, obtain high prices, all is well. But it may well be contended that, after all, the public is entitled to some consideration, and their interests are served by keeping the market well supplied. A. D.

ROSES AT KING'S WALDEN BURY (see figs. 52 and 53).—One of the well-known features of these gardens is the annual display of Roses. The arches and pergolas have been laden with flowers this season, and they have been much admired. The variety illustrated in fig. 53 is *Blush Rambler*. Several methods are adopted to show the Roses to the best advantage. In one of the rosaries two large beds are raised in the shape of a basket; Oak battens form the sides, and the brim is made of the same material, whilst an arch over the centre represents the handle. Tall Larch supports here and there carry vigorous climbing Roses, which ramble at will. Perhaps the most pleasing are those which represent shower bouquets and umbrellas. In fig. 52 some of these are illustrated. The variety *William Allen Richardson* succeeds well on the south side of the mansion. A. J. H., *Shinfield*.



[Photograph by A. J. Hartness.]

FIG. 53.—ROSE ARCH IN KING'S WALDEN BURY GARDENS.

It is *Phaius*-like in growth, and produces its flowers on stout, upright spikes after the manner of *Phaius grandifolius*. The sepals and petals are similar in width, broadly ovate, the lower sepals being folded at the base into a rudimentary spur, and all the segments are curved forward. The sepals and petals are white with a yellow tinge, all flushed with purple at the backs, the petals bearing obscure purple lines. The lip is of claret colour, with a yellowish base and some golden yellow lines around the fleshy-ridged crest. The column is white. The species is a native of North Columbia, and requires to be grown in a shady intermediate house.

SCHOMBURGKIA LYONSII.

THIS is one of the prettiest of the genus, and it has always been a rather rare species. It is of strong growth, resembling *Lælia superbiens* in habit, and bearing stout spikes about 3 feet in length, which are furnished on the terminal part with flowers over 2 inches across and borne on pedicels 3 inches in length. The sepals and petals are pure-white, bearing on the inner portions, irregularly dotted lines of claret-purple,

hard. Mr. Blampied, on the contrary, allows the grass to grow around them to give a little shade to the roots. There seems but little difference in the results: one lot is as floriferous as the other; but I think those at St. Pierre du Bois bore the larger blooms.

Mr. Lilley has been very successful in the raising of new varieties. The white varieties seem to come from *Li Hung Chang*, the giant duplex form, with almost pure-white blooms over 6 inches across, and with very broad, rounded petals. Some bear just a pale yellow or a lemon pencilling in the centre of the petals, others a yellow hair line, others a faint blush of blue; but all the whites show up well amongst the others, and seem very sturdy. One of the prettiest, is a small flower, with dead-white ground, lined with purple, and blue, and gold in radiating veins, and with a soft, plum-coloured centre—an altogether striking flower. General Iho is a new blue, marbled violet and purple, with white veins, a strong, tall spike, and very floriferous. *La Grandesse* is a big flower, white and lemon, with very drooping, broad falls. The largest of all the Japanese Irises is *Baron Komura*. When it was in bloom recently, the second

SWEET WILLIAM PINK.—I have received flowers of Mr. Murison's Mule Pink, which is distinct from anything I have seen, and evidently is allied to the Indian Pink rather than to the Carnation. From what follows, Mr. Murison will see that the connection of the Mule Pink with the Sweet John is not so satisfactorily determined as he assumes. First of all, it is essential to discover to what plant the name Sweet John was applied. Gerarde separates the Sweet William from the Sweet John, which the engravings in his *Herbal* show to be *Dianthus carthusianorum*. Johnson agrees with Gerarde, and though the engravings in Parkinson's *Paradise* are very crude, they, too, indicate a different species from *D. barbatus*. As a garden plant, the Sweet John seems to have been superseded by the Sweet William, and its name to have been usurped by a section of the latter; so that, in the 18th century, Miller and others esteemed the two to have a common origin. Then, as to Fairchild's Mule, and some other Mules, we have apparently clear evidences of their parentage. Bradley, in *New Improvements in Planting and Gardening* (1717), p. 24, records "in the garden of the ingenious Mr. Thomas Fairchild, of Hoxton, a plant, neither Sweet William nor Carnation, but resembling both equally, which was raised from the seed of a Carnation that had been impregnated with the farina of the Sweet William." In Part II. of the same work Bradley advises Sweet Williams, Indian Pinks, and Carnations to be planted together, in order to obtain crosses. The *Complaisant Seedman's Monthly Calendar*, compiled in 1733, contains the following reference to the Mule Pink: "We have several varieties . . . that have leaves like Sweet Williams and flowers of Pinks and Carnations, and were raised from Carnation seeds. Some of these plants are called double Sweet Williams, but as long as they come from Carnation seeds they have as much to do with the Carnation as the Sweet William, so may be called which of the two one will." Gordon, an Edinburgh nurseryman, records a Mule in 1774 which was a cross between a Sweet William and an Indian Pink, and called a "Sweet William Indian Pink." The Indian Pink was sent to Paris about the year 1705, and in a list of plants published in the *Philosophical Transactions*, 1713, Fairchild, at that time, is shown to have possessed it. Miller, in the *Plates of Flowers*, published in connection with his dictionary, mentions 1719 as the date of the first appearance of a double Indian Pink, though he himself did not see one till 1722. It is, to say the least, suspicious that two plants so long cultivated together as the Sweet William and Carnation should have never been known to cross till a year or two after the Indian Pink was admitted to their company, and still more suspicious that, when Miller wanted to classify the Mule, he had to admit it as a "Sweet John" (which it was not), the old engravings of which show it to have only a few flowers in a head, as we know to be characteristic of the crosses with the Indian Pink. So that one cannot help being dubious regarding the parentage of Fairchild's Mule, notwithstanding the remarks of his contemporaries. R. P. Brotherston.

POLLINATION AND FRUIT-PRODUCTION IN MELONS.

The references to pollination on p. 102 opens up a very wide field to horticulturists in general. During the present summer I have grown over 300 Melon fruits; the first crop in a span house consisted of 24 plants, which produced 97 fine fruits, and all were artificially pollinated with flowers from another plant of the same variety. Simultaneously with this planting, nine lights in a slightly-heated frame, 6 feet by 4 feet, were planted with the same varieties as those in the house, and apart from the usual pinching to induce a given number of stems to each plant, they received no other attention. Fruits were produced very freely upon the lateral growths, and were not assisted in any artificial way, other than what insect agency may have afforded. A crop of 103 good, saleable Melons was thus grown in fibrefless soil from which a crop of Potatoes had just been lifted. I also have grown this season in frames of the French type, set down in a field without any bottom warmth, good saleable Melons, and, in no case has the process of fertilisation received any assistance. All that would appear to be necessary is the limiting of each plant to a given number of growths, and the removal of the points of these when they have reached a certain

length. Laterals furnish the fruits, and these are thinned to the required number for each plant and distributed evenly. Do all varieties set with the same freedom under the same conditions? I can say so emphatically, but what I cannot yet say is whether they would do so, provided the seeds sown were of the same age in all the varieties tested. It is a fact well known to gardeners that old seeds produce somewhat less vigorous plants, which are also more fruitful than those grown from seed of the previous year, and my own results have been the best from seeds kept for three years in a tin box. The effect of fertilisation is of immense importance to the seed grower, for, those fruits which are left to swell after their own natural manner produce only seeds that the grower would term flats, such as may be blown away with a puff of wind. I thought perhaps fertilisation might affect the weight of the fruits grown, and have taken the circumference and depth of fertilised and natural productions, but the weight in nearly every instance of the same varieties was practically identical. I have one three-light frame planted with the same variety, with the exception of one plant; the exception is fruiting, but not one of the other plants shows any signs of their fruits swelling, although when hand fertilised there is no difficulty in procuring a crop from this variety, as I have proved this year from another bed. I have seed of a very good Melon, which I shall be glad to send to anyone for experimental purposes, that will produce fruits even if all male flowers are removed before they open, thus preventing any chance of pollination. To demonstrate to the Editors the freedom with which Melons will grow unaided, I enclose a branch of second crop fruits that have set and grown away, while two later fruits of the first crop were maturing. The varieties that prove so free with me under the conditions named are Superlative (a scarlet flesh), Perfection (a green flesh), Hero of Lockinge (a white flesh), and Frogmore Scarlet and Parisian of the Cantaloupe varieties. (Charles Foster, "The Times" Experimental Station, Sutton Green.)

The Week's Work.

THE KITCHEN GARDEN.

By JOHN DUNN, Kitchen Garden Foreman, Royal Gardens, Windsor.

Carrots.—If a supply of Carrots is required during the winter, a sowing should be made in the pit in which the Spring Carrots were grown. All that is necessary is to turn the old bed to a depth of 3 feet, affording a fresh layer about 8 inches deep on the surface. The soil should be built up quite close to the glass, and it should be made firm by treading. When the young plants are large enough to handle, they should be thinned to 4 inches apart each way, afterwards giving a good watering to settle the soil again. Carrots from seeds sown a month ago will be ready for thinning; after this is completed, apply a dressing of soot, and use the Dutch hoe between the drills. For several seasons past our best Carrots have been obtained from late sowings.

Winter Lettuce.—Seeds must now be sown for raising Winter Lettuces, selecting the varieties All the Year Round, Maximum, and Hardy White Cos. Sow the seeds on a south border, so that the plants may be ready early in November. If a little protection from frost is afforded them, they will remain available for use a long time. Provided the cultivator has a few unheated frames at his disposal, the seedlings may be transplanted directly into them as soon as they can be shifted, allowing the lights to remain off until frost or heavy rains occur. Excessive dampness is frequently the cause of failure amongst winter Lettuces. Allow the plants plenty of room, and keep the soil well stirred with a hoe. At Frogmore, we made frequent sowings of Lettuces in August.

Endive.—Endive is only second to Lettuce as a salad plant. For late autumn supplies, it should be planted on a south border sloping well towards the sun. Protection must be afforded the plants from frost and heavy rains. Plants of the Batavian variety from the previous sowing will now be large enough to put out. Allow a dis-

tance of 15 inches or more between the plants, so that the hoe may be used freely amongst them.

Radishes.—Make weekly sowings of Radishes on a partly-spent hot-bed. There they will grow quickly, which is essential if the roots are to be tender. Another essential is abundance of moisture, as Radishes in dry soil are small, hot in flavour, and generally unfit for use.

Mustard and Cress.—Make frequent sowings of Mustard and Cress in situations protected from strong sunshine and drying winds.

Chicory.—The latest batch is now ready for thinning, and this should be carried out before the plants become drawn. Thin the plants to 9 inches apart.

Late Peas.—Although the summer has been dull, there has not been an extra quantity of rain, and, in many localities, late Peas will be benefited by a good soaking of weak liquid manure. Choose a dull day for applying the liquid, and, if manure is given, see that it is not too strong.

Parsley.—Plants raised in June for a winter supply should have the foliage cut closely to the ground, in order to induce the plants to produce as many short-stemmed leaves as possible. When the tops have been cut off, give a good dusting of soot, and move the soil about the plants with the Dutch hoe. The new growths will stand the winter much better than the foliage which developed in July.

PLANTS UNDER GLASS.

By JOHN DONOGHUE, Gardener to JOSEPH PICKERSGILL, Esq., Bardon Hill, Westwood, Yorkshire.

Disbudding Chrysanthemums.—The "taking" of the bud in Chrysanthemums can only be properly carried out after much careful observation and practical experience. In most cases it is necessary to regulate the growth of the plants by stopping the shoots in order that the desired bud may be ready during the last fortnight in August, as buds that are taken at that time usually produce flowers of good quality. In the case of Chrysanthemums for exhibition, the taking of the bud must be regulated by the date on which it is intended to show the blooms. The aim of the cultivator should be to have his plants with well ripened wood and the buds in a proper condition of development before they are brought into the houses. To do this judicious feeding must be practised, avoiding the use of extra strong fertilisers. There are special fertilisers obtainable for the use of Chrysanthemum growers, and, if these are used with discretion, blooms of finer quality and better colour will be obtained. The watering of the plants will need to be done with great care; never apply moisture unless a plant is thoroughly dry, and then let the watering be copious. Three o'clock in the afternoon will be late enough for the last watering, so that there is sufficient time for the surroundings to become dry before evening. Insect pests such as black and green aphids must be combated; the grower should employ insecticides which he has proved to be effectual in former seasons. Stakes that have been placed to the plants should be shortened below the buds as soon as the latter are about the size of Peas.

Plumbago rosea.—These plants should be placed in 6-inch pots to flower. When the pots have become well filled with roots topdress the roots with some fertiliser and give occasional applications of soot water. Plants of the earliest batch may be allowed to flower; they are very showy when in bloom, and will be appreciated from October onwards. Keep the temperature of the house at about 60°, with a night temperature of about 5° lower. The Plumbago does not require much shade during the autumn, and a certain exposure to the sun will assist in ripening the flowering shoots. As a rule the stems are sufficiently stout to support the flowers without a stake.

Zonal Pelargonium.—It is advisable to house the plants early in view of the wet and dull autumns of the last few years. Excess of moisture at the roots through rain causes a luxuriant growth, but it does not become sufficiently ripened to flower satisfactorily, and, being sappy, usually collapses during the winter. When the plants are brought indoors, place them near to the glass and allow plenty of fresh air to circulate about them, as this will assist in the production of short-jointed, well-matured growth.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Biford, Surrey.

Phalænopsis.—The large-flowered sorts, such as *P. Schilleriana*, *P. amabilis*, *P. Aphrodite*, *P. Stuartiana*, *P. Sanderiana*, *P. Rimestadiana*, and *P. leucorhoda* have made considerable progress with their new leaves, although in some places, owing to the long deficiency of the natural sun-heat, plants generally are somewhat backward with their growth. A high, sun-heated temperature is always beneficial to them, but the artificial heat, which has been necessary for many months past, is harmful. In ordinary summer weather the ventilators should be opened for an hour or so during the middle of the day, especially the top ones. But if the warmth inside decreases or any draught is felt, then let the lower ventilators be closed, whilst leaving the top ones open. It is advisable to shut the house early in the afternoon, and the floors and stages should be damped, pouring plenty of water immediately under the hot-water pipes. In cases where the glass is coated on the outside with a thin stippling, the blinds may be pulled up early, so that the house will get as much sun-heat as possible. On warm, mild nights the bottom ventilators may be opened slightly at dusk. Keep sufficient warmth in the water pipes to maintain a temperature at night of 70° and 75°. No damping down should be done in the morning until the temperature is rather higher than 70°, with but little or no sun shining on the roof. The chief causes of failure with *Phalænopsis* may be traced to a cool, damp atmosphere and saturated materials at the roots. All the species thrive best when suspended near the roof glass on the north or shady side of the house, where there is plenty of subdued light, but where they are not exposed to direct sunshine. It is best to suspend the plants, for this favours the formation of stout leaves, and it places the plants out of the way of insect pests. Whilst growth is being made and roots are active, the *Sphagnum*-moss should be kept fairly moist, but never saturate it with water; it takes too long to dry. To keep the moss fresh and growing, lightly damp it with a fine sprayer whenever it appears to be getting dry, at the same time spraying the woodwork of the baskets, to which many of the *Orchid* roots cling. Do not allow water to remain in the centre of the plants or in the axils of the leaves. Should the *Sphagnum*-moss about the plants show signs of decay, have it carefully picked out and replaced with fresh moss. Several of the green-leaved species, such as *P. Marie*, *P. Luddemanniana*, *P. tetraspis*, *P. sumatrana*, *P. violacea*, *P. speciosa*, and *P. cornu-cervi*, require more growing space and may be placed in new baskets. Keep them shaded from the sun at all times, for the leaves soon lose their freshness and become shrivelled and unhealthy-looking if exposed even to very strong light. The treatment afforded *Phalænopsis* is suitable for several rare *Bulbophyllum*s, such as *B. virescens*, *B. Ericsonii*, and *B. Binnendijkii*. These plants grow satisfactorily on teak-wood rafts bedded in fresh *Sphagnum*-moss. Place the plants horizontally on pots or, if convenient, they may be suspended from the roof. Sufficient water should be afforded to keep the moss at all times in a growing condition.

THE FLOWER GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Hertfordshire.

The shrubberies.—The present season is the best in which to transplant Hollies. Each plant should be removed with a good ball of earth adhering to the roots, and a thorough application of water should be made as soon as the tree is replanted. Syringings with clear water during dry weather will assist the plants to get a fresh hold of the soil. Yews and other evergreens which have not made much growth since last season may be transplanted again, if desirable, at this time of the year. Attend to the tying of shrubs, especially to the leaders of those intended to form specimens. In the near future it will be necessary to make notes of any improvements it is intended to carry out during next planting season, and of any removals that may be necessary from shrubberies that have become too crowded, either for good effect or for the welfare of the plants. Those that are to be lifted may be marked by tying upon them long pieces of raffia or string.

The summer bedding.—The present season is not a satisfactory one for summer-flowering plants, for these have made a considerable amount of soft, sappy growth. At the same time note should be made of any plants which are remarkable from some standpoint or another, and definite plans should be arranged for the scheme of planting next year, in order that the propagation of the different subjects may be carried out without confusion during the next month or six weeks. In places where large plants of *Zonal Pelargoniums* are raised each season in 5 or 6-inch pots, it is quite late enough to take cuttings for these. There are various methods of propagating *Zonal Pelargoniums*, but I prefer to root them in small pots. They require an abundance of ventilation, but at the same time need to be given a place which is sheltered from heavy rains. Plants of *Fuchsia*, *Heliotrope*, *Swainsonia*, &c., that have been cultivated in pots must be carefully attended to in the matter of watering, not allowing them to suffer from drought. In most cases the pots are already full of roots, therefore liquid manure at frequent intervals will be beneficial to them.

Pentstemon.—The *Pentstemons* are now providing a blaze of colour, and they constitute one of the brightest features of the garden. Plants which have been raised from seed invariably flower a trifle later than those propagated from cuttings. Cuttings of named varieties or of varieties of special merit may be inserted at the present time, or, preferably, directly after the best display of flowers is passed. We usually root ours in 5-inch pots in a fine, sandy compost. We place the pots closely together in an unheated frame, and shade is afforded. If it is intended to save seeds, selected flower-spikes should be marked, and when the seed is ripe and perfectly dry it should be gathered and placed in a dry position.

Lilium.—Care should be taken to select sufficient species to produce as long a display of bloom as possible. *Liliums* like a rich soil containing plenty of vegetable humus, and in cases where the natural soil is poor it is necessary to add peat, loam and rotted manure. The bulbs should be planted in the autumn, and, if any of the plants already in the garden require to be divided, the redivision and replanting should also be carried out early in the autumn, say, October. If *Liliums* are allowed to remain in one position for too long a period they deteriorate and become weakly. Most of the species require shade during their growth, and they succeed best when placed amongst other plants that protect them from the bright sun and provide them with shelter against winds. *Lilium* bulbs should not be subjected to atmospheric influences for a greater length of time than is necessary, therefore, planting should not be delayed. Do not plant the bulbs too shallowly, for roots are produced from the stems of the plants just above the top of the bulb, and it is desirable that these roots should have soil to root into.

FRUITS UNDER GLASS.

By B. GOODACRE, Gardener to Sir ERNEST CASSELL, G.C.B., Moulton Paddocks, Newmarket.

Peaches and Nectarines.—Ripening Peaches, perhaps more than any other fruit, depend on light and air to develop their full flavour. Their appearance, too, is greatly improved if the sun is allowed to act directly on them. Prop them well up above the foliage, but take care not to ruck the leaves so as to form a harbour for red spider and other insect pests. It is quite unnecessary, however, to remove the leaves; indeed, were this to be done, it would only be at the expense of next year's crop. Take every care when gathering the fruit. Fruit for the table need only be placed in a cool (fruit) room a few hours before sending to table, but if required to be packed for transit an extra day should be allowed. Although both *Peaches* and *Nectarines* can be kept quite a fortnight if gathered when firm, they lose much of their flavour, becoming dead and soapy. An experienced man can tell, by the appearance of the fruit, when it is ready to be pulled, and a careful examination every other day will prevent any from falling. Some people use nets for catching falling *Peaches*, but a good thick layer of soft new hay will be found to answer the purpose better. *Peaches* which

are swelling their crops will need plenty of water, and, if they are fed liberally as they commence to colour, this will be sufficient. Do not let the trees become dry at the roots after the crop has been gathered. A good mulching of decayed stable manure will assist in keeping the border moist. Examine the trees carefully, and remove unnecessary shoots, thus allowing light and air to gain admittance to next year's fruiting wood. Syringe the trees occasionally, and, if red spider makes an appearance, add a little Quassia Extract to the water.

Pine Apples.—Pines for early summer fruiting should now have their pots well filled with roots. Any suckers which form on the young plants should be taken away immediately. The supply of water at the root may be gradually decreased, but the plants must not be allowed to become dry. The temperature may be allowed to fall a few degrees at night, as a rest at the end of the present month will greatly assist the plants to throw up their fruit regularly for early summer supply. Late plants now going out of flower will require encouraging by a little extra feeding and copious supplies of water. Take full advantage of sun-heat by closing the pit early in the afternoon. When the fruits commence to colour, treat the plants as advised in previous Calendars.

THE HARDY FRUIT GARDEN.

By A. R. SEARLE, Gardener to the Marquis of NORTHAMPTON, Castle Ashby, Northamptonshire.

Morello Cherries.—These are usually ready for bottling at about this date. Gather the fruits when they are perfectly dry, and lay them thinly on shallow trays for a day or two in a well-ventilated room, which will ensure them being thoroughly dry before use. For bottling, select the darkest-coloured berries, and cut off the stalks quite close with a pair of scissors. The fruits which are not sufficiently good for bottling may be utilised for jam; for this purpose also they must be thoroughly dry. *Morello Cherries* hang for a long time in a good condition after they are ripe, the fruits being very valuable for cooking purposes late in the year. We gathered *Cherries* as late as the middle of October last season.

Vines.—The season has been most unfavourable for *Grapes* out-of-doors. Assist the plants to ripen the bunches by thinning out all unnecessary shoots and stopping those which are retained, so as to expose the bunches as much as possible. The leading shoots may be allowed to extend about 4 or 5 feet, and then be stopped. Mildew is very prevalent this season. Immediately any is detected, dust the leaves with flowers of sulphur. *Vines* growing in hot or dry positions and carrying good crops of fruit should be given frequent applications of liquid manure. It is not generally recognised that dryness at the roots of vines is often the cause of red spider and mildew appearing on the foliage.

Pears.—There are so few *Pears* this year that extra care is needed with this crop. Remove all breast wood from the trees, and apply water to the roots as often as is necessary. Varieties that ripen their fruits early should be protected by nets, otherwise the birds will damage them. Once *Pears* are pecked by birds, wasps and flies soon complete the destruction. The variety *Beacon* is already ripe in these gardens: other varieties almost ripe are *Doyenné d'Ete*, *Citron de Carmes*, *Doctor Jules Guyot*, *Beurré Giffard*, and *Jargonelle*. The fruits of these varieties should not be allowed to remain on the trees until they are fully ripe, otherwise the flavour will deteriorate: this also applies to early varieties of *Apples*. Pay careful attention to mid-season and later-fruiting *Pears*. Trees which are carrying good crops should be given applications of liquid manure, or some quickly-soluble fertiliser, washing the manurial properties well into the soil with water. *Pears* often suffer from lack of moisture at the roots at this season of the year, and the result is seen in small, immature fruits. Not only is this the case, but the fruit-buds that should furnish next year's crop are also affected.

Hoeing.—The Dutch hoe should be kept constantly at work, as weeds are unusually plentiful this year. Hoeing serves also to check evaporation from the soil at a time when moisture at the roots is essential.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

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Letters for Publication, as well as specimens of plants for naming, should be addressed to the EDITORS, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Local News.—Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Illustrations.—The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c., but they cannot be responsible for loss or injury.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editors to see.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, AUGUST 23—
Roy. Oxfordshire Hort. Soc. Autumn Sb.

THURSDAY, AUGUST 25—
Roy. Hort. Soc. of Aberdeen Exh. at Duthie Park (3 days). Exh. at Zeist, Holland, opens.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich—69.9°.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, August 17 (6 p.m.): Max. 67°; Min. 56°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, August 18 (10 a.m.): Bar. 30.1; Temp. 69°; Weather—Bright sunshine.

PROVINCES.—Wednesday, August 17; Max. 66° Cambridge; Min. 60° Ireland N.W.

SALES FOR THE ENSUING WEEK.

MONDAY, WEDNESDAY, AND THURSDAY—
Trade Sale of Dutch Bulbs at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.

WEDNESDAY—

Consignment of Lilium Harrisii Azorean, L. longiflorum, Roman Hyacinths, and numerous other bulbs, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 5.

Culture
for
Show
Purposes.

The correspondence which has appeared recently in these columns on the cultivation of vegetables for show purposes, though it has served to ventilate opposed opinions, has not taken into consideration what may be regarded as the larger, and perhaps more fundamental aspect of the question. The nature of this more general aspect may be best developed by an endeavour to answer the question: Why is it that culture for exhibitions is popular with many of our best horticulturists? Now, any attempt to answer this question merely by reference to prizes and other tangible rewards which attend success in exhibition fails, because it does not go to the root of the matter. We do not doubt that such rewards are sought for eagerly and prized highly by the contestants; on the contrary, we should look with some suspicion on anyone who professed himself indifferent to the legitimate rewards which attend upon success. But the prime motive for holding shows and for cultivating exhibition produce, although often unexpressed or even held unconsciously, is to be found in the love of "form" which the people

of this country possess in an extraordinary degree. It is no exaggeration to say that Britons have the faculty of the fancier, and that, it is this faculty, coupled with the sportsman's appreciation for competition, which leads horticulturists to take a pride and pleasure in exhibiting their produce. The faculty of the fancier depends on two mental qualities, a capacity for clear observation and a nice discrimination. The search after novelty of form, colour or other quality, innate in many of our fellow-countrymen, has led to the discovery of new breeds of plants and animals, and to the creation of forms of life which might never have arisen or, at any rate, maintained themselves in a state of nature. Thus it is a significant fact that the first plant-hybrids were raised, not by men of science, but by English gardeners, and the work of Fairchild and others was continued by British gardeners with extraordinary success. So, too, our country is famous throughout the world for its breeds of cattle, sheep, horses, dogs, poultry, pigeons, canaries and other things.

The love of form as we have called this power of fancying is manifested not only by professionals, but also by amateurs, who often devote themselves with success to one special breed of plant or animal. It is so widespread as to be thoroughly characteristic, and it is so much a spur to action that it is not infrequently divorced from considerations of utility. Indeed, our countrymen have had to be reminded more than once of recent years that, in defining "points" for prize purposes, they have, as in the case of poultry, neglected utility almost completely, and, in the case of certain flowers, sufficient importance has not been given to their fitness for garden decoration, whilst, in some cases—the Rose, for instance—fanciers have appeared careless and unappreciative of its most pleasing and characteristic quality, namely, fragrance.

At the same time, it has to be admitted that, as the result of the exercise of this widespread gift, the diversity and value of domestic animals and cultivated plants have been augmented. It is the natural striving for perfection as defined by accepted standards or models which leads horticulturists to vie with one another in the exhibition of their produce.

The most important function of the societies devoted to special branches of horticulture is to see that the standards imposed at the shows are the best that can be devised, being neither too narrow to exclude novelty, nor too wide to include inferior produce; and, above all, in the case of fruit and vegetables, they should take care that the importance of mere size is not exaggerated. The best exhibition vegetables should be the best vegetables for consumption, just as the best exhibition Roses or Dahlias should be specially pleasing in the garden and bouquet. From this point of view we think that *Practical's* original contribution on the subject may do much good. There is some truth in the contention that the quality of size in vegetables is given more encouragement at some of the competitive shows than is desirable, and the correspondence may cause those responsible for promoting the exhibitions to give greater consideration to this question. We say this much, although we are fully aware that many kinds of vegetables are, other things being equal, all the better for

being of considerable size, and, further, that certain kinds, such, for instance, as Celery, Celeriac and Leeks, are never very good unless they are developed to their best.

The best exhibitions afford plenty of object lessons for schedule-makers and those called upon to adjudicate at vegetable competitions, for the general rule is to give the highest prizes for the best, rather than the largest, produce. Indeed, there has been a most gratifying improvement in this respect in recent years. Everyone agrees that Potato tubers of extra large size seldom possess good table qualities, and few will contend that large tubers are the most successful at the competitions; on the contrary, the best prizes are awarded to medium or even small tubers with clear skins, which show that the crop has been cultivated in a suitable soil free from an excess of fresh organic manure.

May we hope that the judging at the vegetable shows to be held this autumn under the auspices of the National Vegetable Society and Royal Horticultural Society will be free from defects, and that the schedule now being compiled for the great International Exhibition, 1912, will leave no room for doubt, but that good quality and variety are the essential points the Committee wishes to encourage?

In regard to the alleged expensiveness and artificiality of show-culture, we do not know that the argument is specially applicable to show vegetables. May not such an objection be urged against many other things, for instance, Grapes, Carnations, Roses, Auriculas, and even poultry and fat cattle? In a competition, those who take the most trouble are those who enter the better into the spirit of the thing. The prevention or correction of abuse, we must again repeat, is to be looked for in the exercise of the judge's discretion and the code of points the societies agree to reward. As well ask a Grape exhibitor how many bunches of fruit he obtained from his vine, the Rose grower how many flowers he had to select from when choosing his exhibition blooms, as require the vegetable cultivator to state how many Pea plants were grown on a particular area or how many pods of Peas were produced by a single plant. All these questions would be perfectly natural in a competition intended in the main, to test the cropping qualities of particular varieties.

We have sympathy for the occasional visitor who is apt to be deceived at the exhibitions by the extraordinary quality of the produce staged for his inspection, and, particularly for any gardener who is required by his employer to provide similar things without having the necessary means for doing so. This is an instance where a little knowledge is dangerous. We have always held that it is those who possess the most knowledge who can hope to get the best information from the shows. But the fact applies to all shows and not specially to vegetable competitions.

At the same time, we think that intelligent visitors may be expected to consider that exhibitions are composed exclusively of highly-cultivated flowers, fruits, or vegetables, and he is foolish indeed who imagines that they can be equalled without the expenditure of extraordinary efforts. Surely the show committees can hardly be expected to save such an one from the results of his own shortsightedness.

THE "BARR" MEMORIAL.—Since the last list of subscriptions to the memorial of the late PETER BARR was issued, further sums have been received from the following gentlemen:—Messrs. J. SMITH & SONS, ANT. ROOZEN, P. D. WILLIAMS, J. C. WILLIAMS, G. VAN DEN HORST, J. & E. PAGE, BRODIE OF BRODIE, J. FAIRCHILD, DE GRAAFF BROS., VAN KONIGBERG, L. BUCKLAND, RIGON DE SOUTELLINHO, PULMAN MOOY, BAYLOR HARTLAND, and R. HOOPER PEARSON.

THE NEWEST SWEET PEA.—A cablegram has been received in England this week from Mr. W. ATLEE BURPER, of Philadelphia, who is at present in California, informing his friends in this country that his fine new lavender-coloured Sweet Pea will be named in honour of Florence Nightingale.

MUNIFICENT PUBLIC BEQUESTS.—Under the will of the late Mr. ARTHUR LLOYD, a director of Messrs. LLOYD, LTD., proprietors of the *Daily Chronicle* and of *Lloyd's Weekly News*, a sum exceeding £120,000 is left upon trust for charitable purposes. The trustees have full discretion in applying the legacy, which is to be used either for the purchase or the contribution towards the purchase of any open space or open spaces and recreation grounds, or the contribution to the funds of any associations, societies, or committees which provide public gardens, parks, or playing fields; or in donations or contributions to the building or enlargement fund of any hospital, or the general funds of any such hospital or hospitals, or the building fund of new hospitals or convalescent homes; or in giving financial assistance to any institute or recreation room, any athletic or other clubs, or philanthropic societies and institutions; or in making provision for clerical and lay help in any particular parish or parishes. And especially in providing financial support for any scheme having for its object or objects the benefit in any form whatsoever of the employés of all branches or departments of EDWARD LLOYD, LIMITED, or any new or other company into which it may be converted, or which, by means of any reconstruction or amalgamation or transfer may represent or be substituted for such company. Deceased gave his trustees the fullest discretionary powers in dealing with this trust, and, as regards the parks or open spaces, &c., they have power to convey such to the County Council or any public or local authority or committee to be held upon such trusts as the trustees of his will for the time being may approve. He also left numerous bequests to employés of the firm and personal friends, and he directed that two years after his decease there should be paid a sum of £1,000 to the Rev. WILLIAM WILKS, vicar of Shirley, Croydon. His late gardener, Mr. ALFRED POPPIN, is left the sum of £200.

DUBLIN SEED AND NURSERYMEN'S ASSOCIATION.—The members visited Messrs. PENNICK'S Dublin nurseries on the 6th inst. This establishment embraces about 10 acres, and is situated some 500 feet above sea-level in the midst of a country noted for its beautiful scenery. A considerable area is planted with fruit trees. There are also many thousands of Rose trees, and these were in their full season of flowering. But the objects of special interest were rare and choice trees and shrubs, including *Araucaria imbricata*, 500 feet in height, and furnished from the growing point to the base, with handsome pendulous branches; *Ceratonia Siliqua*, the "Locust Tree," some 10 feet high; *Halesia tetraptera*, the "Silver Bell" or Snowdrop Tree; *Drimys Winteri*, standing some 30 feet high in front of a noble Cedar of Lebanon; *Dacrydium Franklandii*, 15 feet; *Pinus Pinea*, 45 feet; *P. insignis*, 100 feet; *Hydrangea vestita* var. *pubescens*, 15 feet; *Crataegus tanacetifolia*, 20 feet; *Cedrus atlantica glauca*, 45 feet; *Pithe-*

sporum coriaceum, 15 feet; *Rhododendron Keysii*, 6 feet; *Liriodendron tulipiferum*, 30 feet; *Eucalyptus Globulus*, 110 feet; *Podocarpus andina*, 12 feet; *Olea intermedia*, 15 feet; *Cytisus Adamii*, 20 feet; *Taxodium distichum*, 25 feet; *Viburnum rugosum*, 6 feet; *Cordylina australis*, 20 feet; *Tilia heterophylla*, 20 feet; *Cupressus sempervirens*, 40 feet; *Pinus laricio*, 80 feet; *Sequoia gigantea*, 90 feet; *Escallonia organensis*, 6 feet; *Myrtus Luma*, 25 feet; *Bossiaea Amherstiana*, *Quercus glabra*, *Photinia glabra*, and *Andromeda formosa*.

THE COUNTESS OF SELKIRK'S GARDEN PRIZES.

—For a number of years past the Countess of SELKIRK has offered prizes for the best-kept gardens on the estates of her late husband in Kirkcudbrightshire. The awards for the present season have just been issued, on a report by Mr. R. SERVICE and Mr. R. COLMAN, the judges. In the district within two miles of the county town, Kirkcudbright, the principal prizes for the best climbers and gardens were awarded as follow:—1, Mrs. DORRANCE, Mutehill; 2, Mrs. TAIT, Mutehill; 3, Mr. McCOLL, The Stell. Beyond two miles: 1, Miss DICKSON, The Doon; 2, Mrs. KELLY, Burnfoot; 3, Mrs. THOMPSON, Cooper's Croft. Hone district: 1, Mrs. LITTLE, Howwell; 2, Mrs. HANNAH, Howwell; 3, Mrs. ROSS, Howwell. Testimony is borne in the report to the improvement effected in the gardens within recent years. It is stated that this season there is both an advance in the arrangement and in the cultivation of the gardens visited. Lady SELKIRK takes a great interest in gardening, and her efforts during a series of years to improve the cottage gardens in her immediate neighbourhood have had beneficial results.

PROFIT FROM FRUIT CULTURE.—Whilst numerous complaints continue to reach us of the losses experienced by fruit-growers this season, one report of quite an opposite character is given to us by Mr. GEORGE BUNYARD. His firm sold some Apple trees a few years ago for planting 13 acres of land, and last week Mr. BUNYARD had the satisfaction of seeing the present season's ungathered crop sold to a purchaser for the sum of £1,000, the purchaser to gather the fruits. This works out at about £75 an acre. The trees are standards, and most of them represent the well-known culinary Apple Lord Derby. These facts afford sufficient proof that in seasons of scarcity it is not every grower who suffers loss, and they also give some idea of the prices that the public will have to pay, this season, for English-grown fruits.

VISIT TO LA MORTOLA.—The members of the Société Botanique de France, under the guidance of Mr. ARBOST-NICE and Prof. LUZ, the secretary of the society, paid a visit to La Mortola on August 5, and were entertained by Lady HAMBURY. The society was returning from a fortnight's visit to the Maritime Alps.

EDINBURGH WORKING MEN'S FLOWER SHOW.

—The annual show of this long-established institution was held in the Corn Exchange, Grassmarket, Edinburgh, on August 13. The show was declared open by Bailie SMITH ELLIOT, who pronounced it an excellent one and commended the society for the beneficial work it was performing. He spoke of the encouragement given to it by the Parks Committee of the City Council, and the interest shown by the education authorities in the children's section. He referred to the interest of Mr. J. W. McHATTIE, the city gardener, in the window-box section, and his encouragement to exhibitors generally. He also spoke strongly in favour of the Corporation giving even greater encouragement to horticulture, although it had done a good deal in the past, and was continuing its help.

RETIREMENT OF MR. D. MURRAY.—We understand that Mr. DAVID MURRAY, gardener to the Marquis of AILSA, at Culzean Castle, Ayrshire, will retire shortly. Mr. MURRAY has filled the position of head gardener at Culzean for many years, and during that time he has been amongst the best-known of Scottish horticulturists. As a fruit-grower he has won great distinction, and his career as an exhibitor has been a highly successful one. He is, however, a many-sided man, and he entered heartily into the scheme adopted at Culzean for the introduction of the new and choice shrubs and plants, which now form a prominent feature of the garden.

JOHANNESBURG PUBLIC PARKS.—Mr. ROBERT PHILLIPS has been appointed Superintendent of the Public Parks, Cemeteries and Zoological Gardens in Johannesburg. Mr. PHILLIPS served his apprenticeship at Ross Priory gardens, Dumbartonshire, where his father was gardener for many years. He was employed afterwards in the Botanic Gardens, Glasgow, under Mr. WHITTON. He emigrated a few years ago to South Africa, and was employed in the Johannesburg Gardens, under the late Mr. STIRSAT. Mr. PHILLIPS, who is 30 years of age, is the younger brother of Mr. JOHN PHILLIPS, of the Golden Acre Nurseries, Edinburgh.

SOCIETIES.

ROYAL HORTICULTURAL.

AUGUST 16.—The usual fortnightly meeting was held on this date in the Society's Hall, Vincent Square, Westminster. There was a good display of flowers, the majority being garden subjects, many large groups of these being almost a repetition of each other. There were also Roses, Sweet Peas, Dahlias, Ferns, and Carnations. The FLORAL COMMITTEE granted four Awards of Merit, all to varieties of Gladioli.

There were fewer exhibits of Orchids than usual, but numerous novelties were presented for award, and the ORCHID COMMITTEE granted one First class Certificate, one Award of Merit, and five Botanical Certificates.

The chief exhibit in the Fruit and Vegetable section was a magnificent group of fruit trees in pots, shown by Messrs. JAS. VEITCH & SONS, LTD., this receiving a Gold Medal. Five varieties of Culinary Peas, which had been under trial at Wisley, received Awards of Merit, and this distinction was also given to a new variety of Melon.

Floral Committee.

Present: W. Marshall, Esq. (Chairman); and Messrs. C. T. Druery, Henry B. May, W. B. Cranfield, James Walker, W. J. Bean, T. W. Turner, R. Hooper Pearson, J. Hudson, J. Douglas, W. Hoare, A. Kingsmill, J. F. McLeod, W. Bain, George Gordon, E. T. Cook, R. C. Notcutt, J. W. Barr, C. E. Pearson, W. P. Thompson, W. J. James, and E. H. Jenkins.

A large group of *Montbretias*, shown in vases, was put up by SYDNEY MORRIS, Esq., Wretham Hall, Thetford (gr. Mr. G. Henley). The varieties included *Prometheus*, Ernest Davidson, orange red; Lady Hamilton, clear, deep orange; Lord Nelson, fiery red; G. Henley, a new variety, with colour similar to Lady Hamilton; St. Botolph, Messidor, the palest variety shown; and Westwick, an exceptionally free bloomer. (Silver-gilt Medal.)

LEOPOLD DE ROTHSCHILD, Esq., C.V.O., Gunnersbury House, Acton (gr. Mr. Jas. Hudson), showed six new varieties of hardy *Nymphaeas*; the best were Meteor, a large, claret-coloured variety; Virginale, a clear white; and Newton, a deep suffusion of rose, with exceptionally fine golden centre.

Varieties of *Nymphaeas* were also shown by the EARL OF WARWICK, Easton Lodge, Duntmow (gr. Mr. H. Lister), the clear, blue flower named after Lord Brooke being remarkably choice.

Messrs. JAS. VEITCH & SONS, LTD., Chelsea, showed miscellaneous greenhouse plants, having a bright exhibit. The beautiful blue of *Exacum macranthum*, mingled pleasingly with the red

Kalanchoe flammea; *Lobelia tenuior* looked equally charming in a bank of the pink *Crocea latifolia*. Cannas also provided a pretty feature, overhung with sprays of the delicate mauve-coloured *Thalictrum dipterocarpum*. There were also standard Fuchsias and varieties of *Abutilon*. As a separate group this firm showed standard plants of *Pelargoniums* and *Salvia splendens*. (Silver Banksian Medal.)

Messrs. WM. WATSON & SONS, LTD., Clontarf Nurseries, Dublin, showed border Carnations. They had a large batch of the new variety named Dublin Pink, a free bloomer, of good size; Lord Carew, a fancy, with bright red stripes; Lady Cory, slaty mauve; Mrs. Peggy Dawson, a yellow-ground fancy, with rich red markings; and Countess of Aberdeen, a yellow-ground Picotee, the petals lightly tipped with red.

A large display of Carnations and early *Chrysanthemums* was set up by Sir DANIEL GOOCH,

were numerous vases filled with an assortment of other kinds, *Rhea Reid*, *Simplicity* (single white), *Souvenir de Marie de Zayas*, *Molly Sharman*, *Crawford*, and *Gruss an Teplitz*, being a selection of the best blooms. (Silver Flora Medal.)

Mr. FRANK WOOLLARD, 53-54, Lewes Road, Brighton, showed Roses in variety.

Mr. CHAS. BREADMORE, Winchester, put up an exhibit of Sweet Peas that extended the whole width of the hall at the platform end. There were 130 vases and about 40 varieties. Notable varieties were *Earl Spencer*, orange; *Freda*, white; *Dazzler*, red or "flamed"; *Princess Juliana*, cream; *Countess Spencer*, *Nancy Perkin*, orange; *Frank Dolby*, lavender; and *Colleen*, rose standard, with paler wings and keel. (Silver-gilt Banksian Medal.)

Messrs. S. BIDE & SONS, LTD., Farnham, Surrey, showed Sweet Peas attractively exhibited. We noticed such sterling sorts as Mrs.

vulgar, having the best crested plumose and serrated varieties, including *P. v. Cambricum*, *P. v. Cambricum Prestonii*, a handsome plumose variety resembling a choice *Nephrolepis*; and *P. v. Barrowii*, also with plumose leafage, but not with such long fronds as the variety *Prestonii*. *Polypodium grandiceps Foxiae* is another beautiful hardy Fern, the densely-crested fronds being of dark green colour. (Bronze Flora Medal.)

Some remarkably fine pot plants of *Campanula pyramidalis*, of both white and blue-flowered sorts, were shown by Col. GEORGE HOWARD TROLLOPE, Fairmile Hatch, Cobham. The huge spikes resembled dense columns of flowers. (Silver Banksian Medal.)

Messrs. KELWAY & SON, Langport, Somerset, showed large numbers of named varieties of *Gladioli*, also choice *Gaillardias* and *Delphiniums*. (Silver-gilt Banksian Medal.)



THE SHREWSBURY SHOW.

FIG. 54.—PART OF A GROUP OF FRUITS, FLOWERS, AND VEGETABLES SHOWN BY MESSRS. SUTTON AND SONS.

Bart., Hylands, Chelmsford (gr. Mr. P. Wilkinson). The blooms were relieved with coloured foliage of shrubs and bunches of *Gypsophila*. (Bronze Banksian Medal.)

Mr. A. L. GWILLIM, Cambria Nursery, New Eltham, Kent, showed tuberous-rooted *Begonias*, a few being named kinds, but the majority seedlings, displayed in batches of distinct colours, which ranged from white to crimson. The display formed a rich bank of colouring, the blooms being good.

Choice Roses were shown by Messrs. FRANK CANT & Co., Colchester. They had large epergnes filled with blooms of one variety, such as *Lyon Rose*, *Papa Gontier*, *Gottfried Keller*, a charming single Rose, the petals blush-tinted on gold, and *Mme. Melanie Soupert*. Beneath these

A. Ireland, Mrs. Hardcastle Sykes, *Orange King* (new), *James Grieve*, Mrs. Routzahn, President, *Helen Lewis*, *Harold*, cream, and *Blue Belle*.

Messrs. CARTER, PAGE & Co., 52 & 53, London Wall, filled a long table with varieties of *Dahlias*, principally of Cactus-flowered sorts. They also showed numerous varieties of the *Pæony*-flowered, pompon and single types. Of the Cactus varieties, notable examples were *Nisi Prius*, fiery red with gold base; *Lustre*, dark red; *Daisy Easton*, yellow; *J. H. Jackson*, very dark maroon; and *Mauve Queen*; all these being good garden sorts. The single and Pompon varieties embraced most of the best kinds in commerce. (Silver Banksian Medal.)

Messrs. H. B. MAY & SONS, The Nurseries, Edmonton, staged a floor group of *Polypodium*

Mr. WILHELM PEITZER, Stuttgart, Germany, showed varieties of *Gladiolus*, most of them unnamed seedlings. In the centre was a fine white sort of the *gandavensis* type, named *Europa*. (Silver Flora Medal.)

Messrs. GEO. BUNYARD & Co., Maidstone, showed a large group of hardy flowers. The display included *Pyrethrums*, *Gladioli*, *Phloxes*, *Pentstemons*, *Coreopsis grandiflora*, *Delphiniums*, *Spiræas*, and other kinds in large batches. (Silver Banksian Medal.)

Messrs. W. WELLS & Co., Merstham, Surrey, showed *Phlox decussata* in considerable numbers, amongst an exhibit of other border flowers. The beautiful rose-pink variety of *Phlox* named *Elizabeth Campbell* is worthy of mention, and they had also fine spikes of the white *Frau*

Antonin Buchner, which received an Award of Merit at the last meeting. *Anthemis Kelwayi* is a bright yellow Composite. Along the front of the display were vases of *Violas* and early blooming *Chrysanthemums*.

Messrs. G. & A. CLARK, LTD., Dover, staged some fine plants of *Campanula Vidallii* in a general collection of hardy flowers. This *Campanula* needs slight protection during the winter. Spikes of *Gladioli* were good, as were *Pentstemons*, *Pyrethrums*, *Scabious*, *Phloxes*, *Veronicas*, and other garden subjects.

Messrs. RICH & Co., Bath, showed 30 varieties of border *Phloxes*. The selection included the best of those in cultivation. Amongst the more notable kinds were *Goliath*, rose with darker eye; *Mme. Paul Dutrie*, blush pink, very large; *Frau Antonin Buchner*, white; *Baron von Dedam*, new, resembling *Coquelicot* but larger; and *Sinbad*, mauve, very large in flower, but dwarf in habit.

The GUILDFORD HARDY PLANT NURSERY made a showy exhibit with hardy flowers, and an adjoining group of a similar character was put up by Messrs. T. S. WARE, LTD., Feltham. (Bronze Flora Medal.)

Mr. MAURICE PRICHARD, Christchurch, Hampshire, filled a large table with border flowers. A batch of *Crinum Powellii* and its white variety was prominent. Mr. PRICHARD had also a fine show of *Montbretias*, *Tritomas*, *Delphiniums*, *Phloxes*, *Gladioli*, and other seasonable subjects. (Silver Flora Medal.)

Messrs. PAUL & SON, The Old Nurseries, Cheshunt, also showed a large group of hardy flowers, having a good selection of seasonable subjects. (Silver Flora Medal.)

Mr. FRANK BRAZIER, Caterham, exhibited a floor group of *Phloxes*, *Carnations*, *Sweet Peas*, *Verbenas*, *Violas*, and other garden flowers. (Bronze Banksian Medal.)

Mr. JAMES BOX, Lindfield, Sussex, showed a large group of *Phloxes*, with a row of *Delphiniums*, *Montbretias*, and *Ferns* as an edging. (Bronze Flora Medal.)

Messrs. BARR & SONS, King Street, Covent Garden, London, displayed hardy flowers in variety, such as *Phloxes*, *Gladioli*, *Delphiniums*, *Aparanthus Mooreanus*, *Veronica subsessilis* (very fine), *Liliums*, and *African Marigolds*.

Displays of hardy flowers were also made by Messrs. WHITELEGG & PAGE, Chislehurst, Kent, and Mr. A. J. HARWOOD, St. Peter's Nursery, Colchester.

AWARDS OF MERIT.

Gladiolus primulinus.—Flowers of this pretty yellow-flowered species were shown by Messrs. KELWAY & SON. *G. primulinus* was illustrated in these pages, October 26, 1907, p. 291.

Gladiolus "Europa".—This appeared to us the best white *Gladiolus* in cultivation. The flowers were large, of good form and substance, and as many as six were expanded on the spike at one time. Shown by Mr. W. PFITZER, Stuttgart, Germany.

Gladiolus Gräfin Degenfeld.—This variety is perfectly distinct. The flowers are sulphur or pale primrose-yellow, with exceedingly bright-crimson markings on the lower segments. Shown by Mr. W. PFITZER.

Gladiolus Karl Luz.—A variety of the deepest tone of crimson-maroon, with chocolate-coloured throat. Shown by Mr. W. PFITZER, who exhibited a large number of varieties remarkable for high quality and distinctness from sorts already in commerce.

Orchid Committee.

Present: Harry J. Veitch, Esq. (in the Chair); and Messrs. Jas. O'Brien (hon. sec.), de B. Crawshay, H. Little, F. J. Hanbury, A. A. McBean, W. Cobb, J. Charlesworth, A. Dye, W. P. Bound, H. G. Alexander, H. A. Tracy, Gurney Wilson, W. Bolton, Stuart Low, W. Thompson, and W. H. White.

Mrs. BISCHOFFSHEIM, The Warren House, Stanmore (Orchid grower, Mr. Taylor), was awarded a Silver-gilt Lindley Medal for a magnificent group of brilliantly-coloured *Disa grandiflora*, composed of about 100 plants. They were cultivated on the special plan adopted at The Warren House, whereby each specimen produces a stout, single growth, with a fine head of large flowers varying from brilliant orange-scarlet to deep red, both foliage and flowers exhibiting great vigour.

Lieut.-Col. Sir GEORGE L. HOLFORD, K.C.V.O., Westonbirt (gr. Mr. H. Alexander), was awarded a Silver-gilt Flora Medal for a group of seven grand specimens of *Vanda coerulescens*, with large spikes of noble flowers, the largest bearing 16 blooms; two of the plants had two spikes on each. All the blooms were of a beautiful blue tint and had broad segments, the best being the Westonbirt variety (see Awards). The base of the group was composed of about 30 finely-flowered plants of the fine type of *Cypripedium Maudiae* raised at Westonbirt, and a good plant of *Laelio-Cattleya Colmaniana* magnifica.

Messrs. SANDER & SONS, St. Albans, were awarded a Silver Flora Medal for a very extensive and varied group, in which hybrid *Cattleyas*, *Laelio-Cattleyas*, and *Odontoglossums* were prominent. *Vanda coerulescens* showed up well in the centre of the display, and *Vanda Marguerite Maron*, *Peristeria elata*, some good hybrid *Cypripediums*, *Cycnoches chlorochilon*, *Sophrro-Cattleya Chamberlainiana*, and other *Sophrro-Cattleyas* and *Odontodas* were also noted.

Messrs. STUART LOW & Co., Bush Hill Park, Enfield, were awarded a Silver Flora Medal for an interesting group of *Odontoglossums*, *Cattleyas*, *Brasso-Cattleyas*, and other Orchids. Interesting species remarked were the pretty, *Sigmatostalix Eliae*, *Notylia Barkeri*, *Oncidium biforme*, *Odontoglossum Wallisii*, *Masdevallia calura*, *M. ephippium*, *M. Peristeria*, and other *Masdevallias*. Of *Dendrobium*, *D. chesingtonense* var. I. M. Black was conspicuous, its orange-yellow flowers having a reddish disc to the lip. This firm also showed the fine natural hybrid *Cattleya Le Czar* "Low's variety." For others see Awards.

Messrs. CHARLESWORTH & Co., Haywards Heath, exhibited a selection of rare species, which included *Eulophia guineensis*, the white *Mormodes luxatum punctatum*, which has small purple spots on the segments; *Anguloa Ruckeri* superba, *Schlimia trifida*, a grand specimen of *Aerides Lawrenciae* with four spikes, a good plant of *Houlletia Brocklehurstiana*, *Cryptophoranthus Dayanus*, with about 300 of its curious flowers; and various other pretty species.

H. S. GOODSON, Esq., Fairlawn, Putney (gr. Mr. G. E. Day), staged a small group, which included the pretty *Odontoglossum Goodsonii*, *O. Solon*, *O. Uro-Skinneri* album, *Anguloa uniflora eburnea*, two plants of *Cattleya Crashleyi* differing much in colour, and the handsome *Laelio-Cattleya St. Gothard*.

Sir TREVOR LAWRENCE, Bart., K.C.V.O. (gr. Mr. W. H. White), exhibited a selection of rare species, several of which received awards.

DE B. CRAWSHAY, Esq., Rosefield, Sevenoaks (gr. Mr. Stables), showed a good dark form of *Odontoglossum Queen Alexandra* and *O. Thwaitesii* (*Harrayanum* × *ardentissimum*), the pretty flowers being marked like a blotched form of *O. ardentissimum*.

Messrs. J. & A. A. McBEAN, Cooksbridge, staged a neat group of well-grown *Odontoglossums*, and with them two plants of the new *Odontodia Graireana*, with cinnamon-red-tinted sepals and petals; also *O. Bohnhoffia*, good *Laelio-Cattleya callistoglossa*, and *Cattleya Warscewiczii*.

Mrs. NORMAN C. COOKSON, Oakwood, Wylam (gr. Mr. H. J. Chapman), showed *Cattleya Oakwoodensis* (*Warneri* × *Hardyana*), *Odontoglossum Pescatorei* Cookson's variety, with well-formed white flowers, bearing dark purple blotches; *Cypripedium Chapmaniae* and *C. Sybil*, both pretty hybrids of *C. Fairrieanum*.

Mr. E. V. Low, Vale Bridge, Haywards Heath, staged a small group, in the centre of which was a fine plant of *Cypripedium l'Ansonii*. They also exhibited *C. Mary Beatrice* and *C. Juno Drewett's* variety; *Laelio-Cattleya Nysa superba*, *Cattleya Atalanta*, *Brasso-Cattleya Mrs. J. Lee-mann*, and a delicate form of *Oncidium Mantinii*.

Messrs. JONES, HOWES & Co., Elmdon Nurseries, Kenilworth, showed a well-grown plant of *Cattleya O'Brieniana* alba.

AWARDS.

FIRST-CLASS CERTIFICATE.

Vanda coerulescens Westonbirt variety, from Lieut.-Col. Sir GEORGE L. HOLFORD, K.C.V.O. (gr. Mr. H. G. Alexander).—Probably the finest form of *Vanda coerulescens* ever shown, the flowers being 5 inches in diameter, perfectly circular in outline, and with equally broad segments heavily veined with deep indigo-blue, the lip being dark violet.

AWARD OF MERIT.

Oncidium Mantinii Lowii, from Mr. E. V. Low, Vale Bridge, Haywards Heath.—A distinct and beautiful citron-yellow form, with obscure olive-brown markings on the sepals, petals, and front of the lip; the flowers are unusually large.

BOTANICAL CERTIFICATES.

Bulbophyllum exaltatum, from Sir TREVOR LAWRENCE, Bart., K.C.V.O. (gr. Mr. W. H. White).—A South American species, bearing long slender scapes, furnished with small flowers; the sepals are marked with dark spots, the fringed lip being purple.

Polytachya paniculata, Rolfe, from Sir TREVOR LAWRENCE.—A singular and pretty species from Uganda, with curiously flattened pseudo-bulbs and ornamental growths bearing upright, branched spikes of pretty, small, orange-red flowers.

Theodorea gomezioides, from Sir TREVOR LAWRENCE.—A dwarf species, bearing drooping racemes of greenish flowers with white labellums.

Cypripodium Andersonii, from Messrs. STUART LOW & Co., Bush Hill Park.—A well-known, strong-growing species, bearing stout spikes of bright yellow flowers.

Stanhopea saccata, from Messrs. STUART LOW & Co.—A showy species, with sepals and petals yellowish, spotted with purple, the fleshy labellum having the hypochile developed into a deep pouch, orange tinted, the front lobe and fleshy middle lobes being approached to the column.

CULTURAL COMMENDATION

to Mr. Bristow (gr. to Mrs. TEMPLE, Leyswood, Groombridge), for a specimen of *Cypripedium Wiertzianum*, with 3 to 4 flowers on each spike.

Fruit and Vegetable Committee.

Present: G. Bunyard, Esq. (in the Chair); and Messrs. W. Bates, J. Willard, A. Dean, H. Parr, G. Hobday, A. R. Allan, C. Foster, H. Markham, E. Beckett, J. Jaques, O. Thomas, W. Poupert, J. Vert, and G. Kelf.

The superintendent, Mr. S. T. WRIGHT, showed three red seedling Tomatos which had been grown at Wisley for trial. They were all finely fruited, but awards were withheld until names had been given them.

S. H. SCOTT ELLIOTT, Esq., Dumfries, sent a sample of Potato Midlothian Early, grown under electrical influence. The tubers, which had been cooked, were found to be similar to ordinary tubers of that variety.

LEOPOLD SOLOMONS, Esq., Norbury Park, Leatherhead, sent fruits of a yellow Peach, which was recognised as the variety Thames Bank.

Messrs. BUNYARD & Co., LTD., Maidstone, showed a Nectarine of an unusually deep colour. It came originally from New Zealand, and is named Konstange. The Committee desired to see fruits on another occasion.

Messrs. JAMES VEITCH & SONS, Chelsea, staged a magnificent group of fruit trees in pots, in all about 100 trees. Peaches included Thos. Rivers, Marquis of Downshire, Dr. Hogg, Belle Bauce, Prince of Wales, Late Devonian, Duchess of York, Bellegarde, Nectarine and Royal George, the variety named last being shown as an espalier. Of Nectarines, there were Gondoni, Stanwick Elruge, and Early Orange; Plums, Brandy Gage, Green Gage, Jefferson, Transparent Gage, Deniston's Superb, Oullin's Golden Gage, and Kirke's. All the trees, though not over large, were carrying very heavy crops. Besides these, there were finely-fruited Figs, including Negro Largo, Violette Sepor, Osborn's Prolific, White Ischia, Brown Turkey, and Bourjassotte Grise. Pears were represented by Marguerite Marillat, Louise Bonne of Jersey, Dr. Jules Guyot, and Conference. (Gold Medal.)

AWARDS OF MERIT.

Melon Early Favorite (Windsor Castle × Beechwood).—This variety was raised and grown in the Society's gardens at Wisley. It was an oval, green-fleshed fruit.

The following Peas having been grown at Wisley under trial were granted Awards of Merit:—Satisfaction, Yorkshire Hero, and Windsor Castle (SUTTON & SONS), Exhibition (J. CARTER & Co.), and Magnum Bonum (BARR & SONS).

SHROPSHIRE HORTICULTURAL.

Exhibition at Shrewsbury, August 17 and 18.

THE 36th annual show of the Shropshire Horticultural Society took place on Wednesday and Thursday last in the Quarry Grounds, Shrewsbury, amidst all the enthusiasm and interest which usually characterise the Shropshire exhibitions. We have written so many times of these annual exhibitions, that there appears nothing to remark that has not been said on former occasions. We have eulogised previous displays, and we may praise the most recent show, for it afforded a first-rate illustration of the finest products of British horticulture.

Taken collectively, it can hardly be said to be better than that held last year, but it is extremely high praise when we say that it was, at the least, equal to any show which the Shropshire Society has held. It is difficult, and it will be always difficult, to improve upon such a standard as visitors associate with Shrewsbury. The utmost that the committee can do is to introduce novelty, in some form, from year to year. On the occasion under notice their attempt in this direction took the form of a modification of the group classes. There have always been two classes for groups of miscellaneous plants arranged for effect: in the one case, flowering plants were excluded; in the other, they might be mixed with the fine foliaged plants. The former class was retained, as usual, this year, but the latter was discontinued, and in its place a new class for a display of plants and flowers was substituted, with a view to obtaining floral effects showing some new features. The net result was that the displays were much brighter than any groups have been, but they still leave some room for improvement when exhibitors appreciate the discretion allowed them in the choice of material and in general arrangement. The details will be found below.

Turning to the fruit exhibits, it may be said that the Grapes were certainly not better than usual, nor could this be expected in such a comparatively sunless season. Indeed, since the Marquis of Hastings's last exhibit at Shrewsbury, his produce has never been equalled. Other fruits were excellent, and the competition in the various classes was exceedingly satisfactory.

Hardy flowers were better than they have ever been, if we except Sweet Peas, and vegetables were equal to their former high quality.

It will facilitate convenience on another occasion if the judging is commenced at 9 a.m. instead of 10 o'clock. The public is admitted to the tents at 11.30, and experience shows very conclusively that in present conditions it is not possible to complete the adjudication of the more important classes by that time.

Messrs. Adnitt and Naulton, the secretaries, who have served the Society so long and so well, are still at the helm, and we are sure they may be trusted to arrange this matter satisfactorily.

As showing the increasing interest taken in this provincial horticultural exhibition, it may be stated that a series of photographic films for cinematographic displays in places of amusement was taken by the firm of Messrs. Pathé.

DECORATED FRUIT TABLES.

This popular class is for a collection of 30 dishes of ripe fruit in not fewer than 10 distinct kinds, to be staged on separate tables, measuring 10 feet 6 inches by 4 feet 6 inches. The varieties of fruit to form each separate dish or other receptacle is left to the exhibitor's discretion, but not more than 14 bunches of Grapes are allowed in not fewer than four varieties (to include black and white), and not more than four varieties of any one kind of fruit, nor more than two dishes of any one variety, only one variety to be shown on a dish, but not more than four dishes of any one kind of fruit. Each collection might be decorated with flowering and foliage plants in pots not exceeding 5 inches diameter, also cut flowers and foliage (including Orchids) shown in glasses, ware, baskets, or boxes.

The judging of the five exhibits staged in this class commenced at 10 o'clock a.m., and at lunch time—1.30—the prize tickets were still undisputed. When it is pointed out that the public are admitted to the show at 11.30 a.m., it has scarcely to be stated that judging was proceeding in the presence of a considerable crowd of people. It is not possible (as experience has shown) to point these "dishes" and get the class judged by 11.30. The committee is not likely to entertain the idea of shortening the time the exhibition is open to public inspection. Therefore, the only thing to be done is to start the judging earlier in the day. We hope this will be done. Further, there were some criticisms last year in respect to the points awarded by the judges to each dish. Whether, as a result or not of that discussion, the schedule for the present season reads as follows:—*"The points awarded to each separate dish and table will be marked on cards and placed on each table after being judged."*

This was not done, as will be seen on a perusal of the following figures, in which the points for Apples, or Grapes, or Peaches are so lumped as to be valueless. This matter seems all the more regrettable since the judges have informed us that they furnished to the committee a return of the points awarded for every particular dish. The following particulars are all that could be taken after the publication of the awards, owing to the crowding of the visitors. The 1st prize was awarded to the Duke of WESTMINSTER, Eaton Hall, Chester (gr. Mr. Barnes), and the published table of points was as follows:—Apples, 25½ points; Apricots, 5 points; Figs, 6 points; Grapes, 54 points; Melons, 27 points; Nectarines, 27 points; Peaches, 28 points; Pears, 24 points; Plums, 5 points; beauty and arrangement, 10 points; total, 211½. The 2nd prize was awarded to the Earl of HARRINGTON, Elvaston Castle, Derbyshire, who gained 200½ points; the 3rd prize to the Duke of PORTLAND, Welbeck Abbey, Notts., for 193½; the 4th prize to J. DRAKES, Esq., for 189½; and the 5th prize to Lady HENRY SOMERSET, for 177 points.

COLLECTIONS OF FRUIT.

The most important class in this section was one for a collection of 12 dishes of fruit, distinct varieties, not fewer than nine kinds and not more than two varieties of a kind. Black and white Grapes to be distinct kinds of fruit, and two bunches of each variety. Each exhibit was to occupy a space of 6 feet by 4 feet 6 inches. The 1st prize offered was £10, the 2nd prize £6, 3rd prize £4, and 4th prize £3.

As many as seven exhibitors entered this somewhat difficult contest, especially difficult to those having gardens of a limited extent, for the produce has to be first class even to win a prize of any sort. The best collection was one from Mr. S. BARKER, Worksop, and it was extremely well deserving of the highest award. The Grapes exhibited included the varieties Muscat of Alexandria, Muscat Hamburgh, and Madresfield Court. Of these we preferred the fruits of Madresfield Court, for not only were the bunches large and of good, though not perfect shape, but the berries were large, plump, and grandly coloured. Muscat of Alexandria was too small in berry to be of the highest merit, and they were uneven in size, whilst the colour was not extra good. Muscat Hamburgh was exceedingly well coloured, and one bunch was of capital weight and moderately good form, but the bunches were uneven and failed to match each other as exhibition Grapes are expected to do. Amongst the other kinds of fruit were highly-finished, rather small fruits of Humboldt Nectarine, excellent fruits of Goshawk and another Peach, Coe's Golden Drop Plum, Washington Apple, Negro Largo Fig, Pitmaston Duchess Pear, and Royal Jubilee Melon. Taking them together the collection was deserving of great commendation. The 2nd prize was gained by LORD BELPER, Kingston Hall (gr. Mr.

W. H. Cooke). In several respects this exhibit was quite equal to that we have just noticed. The Peaches and Nectarines were particularly good, especially Nectarine Spencer and Peach English Galande. The specimens of Gascoyne's Scarlet Seedling Apple were quite exceptional fruits, being of very large size and rich colour. Marguerite Marillat Pears were large, but scarcely ripe. Large Early Apricots were excellent, and Brown Turkey Figs of moderate quality. The Grapes included Gros Maroc, Muscat of Alexandria, and Madresfield Court. Gros Maroc were small, excellently-coloured bunches, Madresfield Court long, tapering, but rather thin bunches of well-finished Grapes; and Muscat of Alexandria, fair-sized examples, of moderately good form and finish. A fruit of "Eminence" Melon completed the exhibit. 3rd, LORD BIDDULPH, Ledbury Park (gr. Mr. H. Cotton), who showed Grapes Gros Maroc, Muscat of Alexandria, Black Hamburgh, and Duke of Buccleuch. The Peaches, Nectarines, Apples, Pears, and Apricots were very fine in this exhibit. 4th, Mrs. F. NEED, Malvern (gr. Mr. J. Jones). The prizes for the floral decorations in this class were awarded as follow: 1st, LORD BIDDULPH, who used Orchids; 2nd, Mr. S. BARKER; and 3rd, Mr. W. E. HYDE, Sheffield.

In the class for 9 dishes, there were three exhibits, and the best of these was one shown by CAPTAIN HEYWOOD-LONSDALE, Shavington Hall (gr. Mr. J. Mills). He had small bunches of highly-finished Grapes in the varieties Muscat of Alexandria and Madresfield Court, Nectarine and an unnamed Peach, Pitmaston Orange and Elruge Nectarines, Charles Ross and Rival Apples, and a scarlet-fleshed Melon. The exhibit was decorated with a few pink Carnations and Selaginella sprays, and the 2nd prize was gained for this floral decoration. The 2nd prize for fruit was won by F. RIBBY, Esq., Hardwicke Grange, Shrewsbury (gr. Mr. W. Taylor). This exhibitor lost much in his Grapes, having selected the varieties Gros Colman and Foster's Seedling, whilst the fruits of Foster's Seedling were not only small in berry, but extremely deficient in colour. Pretty Nectarines were shown in the variety Pitmaston Orange; the other dishes were Princess Victoria and Belle-garde Peaches, Worcester Pearmain and Beauty of Bath Apples and Royal Jubilee and Cantaloupe Melons. This exhibitor gained the 1st prize for the floral decorations. The 3rd prizes for fruit and floral decorations were awarded to Mrs. SWANN, Halston Hall (gr. Mr. Roberts).

GRAPES.

Twelve bunches of Grapes in four or more distinct varieties, but not more than four bunches of any one variety.—Each bunch was to be judged on its individual merits, and the points awarded marked on cards and placed on each table after being judged. A maximum of 11 points might be given to Muscat of Alexandria. A maximum of 10 points to all other Muscats (black or white) and Black Hamburgh, and nine points to all other Grapes.

The bunches were to be staged on boards (single if possible) and the whole arranged on a table space 8 feet by 4 feet 6 inches, in two tiers, 2 feet 3 inches wide.

For the purpose of this competition, Bowood Muscat, Charlesworth Toquay, and Tynningham Muscat could not be shown as distinct varieties with Muscat of Alexandria. Gros Maroc and Cooper's Black were also considered synonymous.

Superior cultivation and finish were considered of the greatest importance.

Each collection was decorated; flowering and foliage plants, in pots not exceeding 5 inches in diameter, were allowed, also cut flowers (including Orchids), and foliage, shown in glass, ware, or loose, allowed at the exhibitor's discretion.

There were six exhibitors, and the best exhibit was staged by J. DRAKE, Esq. We reproduce the

table, showing the number of points awarded by the judges to the several bunches:—

No. of Bunch.	Variety of Grape.	Points Awarded.	Possible No. of Points.
1	Gros Maroc (judged as Black Hamburgh) ...	9	10
2	Muscat of Alexandria ...	9	11
3	Madresfield Court ...	9	10
4	Muscat of Alexandria ...	8½	11
5	Madresfield Court ...	9	10
6	Canon Hall Muscat ...	9	10
7	Madresfield Court ...	9	10
8	Muscat of Alexandria ...	8½	11
9	Gros Maroc ...	8	9
10	Gros Maroc ...	8	9
11	Muscat of Alexandria ...	8½	11
12	Madresfield Court ...	9½	10
Totals ...		105	122

It will be seen that in no case did the judges award the maximum number of points for any particular bunch. Madresfield Court more nearly approached to this than any other variety, and we fully agree with the conclusion arrived at. Each of the specimens was of capital size, form and colour, whilst the size of the berries was excellent, especially in the case of bunch numbered 12 in the table. The Muscat of Alexandria were large bunches, being amongst the best in this respect, but the size of the berries left something to be desired, whilst the colour in the different portions of the bunch was unequal. The single bunch of Canon Hall Muscat was deserving of commendation, but the berries should have shown better colour. Gros Maroc, in each instance, was very good.

The 2nd prize was gained by Lord BELPER, whose bunches were very much smaller than those shown in the collection already noticed, whilst Nos. 9 and 10 (Muscat of Alexandria) were very small and badly coloured. We reproduce the table, although it has to be stated that, in comparing the two exhibits, the pointing in Lord BELPER's collection appears to be excessively high:—

No. of Bunch.	Variety of Grape.	Points Awarded.	Possible No. of Points.
1	Gros Maroc ...	9	9
2	Muscat of Alexandria ...	9	11
3	Madresfield Court ...	8	10
4	Madresfield Court ...	9	10
5	Muscat of Alexandria ...	8½	11
6	Muscat Hamburgh ...	6½	10
7	Muscat Hamburgh ...	7½	10
8	Madresfield Court ...	10	10
9	Muscat of Alexandria ...	8½	11
10	Muscat of Alexandria ...	8½	11
11	Madresfield Court ...	9½	10
12	Muscat Hamburgh ...	7	10
Totals ...		101	123

3rd, the Earl of HARRINGTON, Elvaston Castle, Derbyshire (gr. Mr. J. H. Goodacre). In this collection two bunches were awarded the maximum number of points, namely Madresfield Court and Black Hamburgh. In neither case should the highest number have been given; in the first, because the bunch left something to be desired in the matter of size, and in the second, because the berries were not so even in size as we expect to see them in a bunch described as "perfect." Still, the collection was an excellent one, and the number of points awarded was 99½ out of a possible 124; 4th, Lady HENRY SOMERSET, who obtained 95½ points out of 123; 5th, H. ST. MAUR, Esq., with 95 points; 6th, Mr. W. A. COATES, Glan Conway, with 89 points. An extra prize was given to a collection shown by Mrs. F. NEED, Malvern (gr. Mr. T. Jones), who gained 86½ points.

The awards for decoration in this class were given as follows:—1st, Mr. PARKER; 2nd, Mrs. NEVE; 3rd, Lady HENRY SOMERSET.

Collection of four bunches.—In this class there were five exhibits, and the 1st prize was awarded to Lord HARLECH, Brogyntyn (gr. Mr. T. Lambert), who staged Muscat of Alexandria and Madresfield Court. The Muscat of Alexandria were long, heavy bunches, but one of them lacked colour, and the size of the berries was not satisfactory. The Madresfield Court were better in finish; 2nd, Mr. J. BARKER, Workop; 3rd, E. BEWLEY, Esq., Dublin (gr. Mr. T. Cave).

The following classes were for two bunches of one variety:—

Black Hamburgh.—In this class there were seven competitors, and the 1st prize was awarded to Lady HENRY SOMERSET, who had first-rate bunches of large berries of handsome colour; 2nd, J. BRUNTON, Esq., Stourport (gr. Mr. H. Wilson), who had larger bunches but smaller berries; 3rd, Lord TREVOR, Brynkinalt (gr. Mr. W. Dawes). The class for a single bunch of this variety was won by Lady HENRY SOMERSET, whilst J. BRINTON, Esq., was 2nd.

Black Muscat varieties.—The variety Madresfield Court was awarded the 1st prize in the class for Black varieties of Muscat. They were shown by Col. FRANCE HAYHURST, Middlewich (gr. Mr. A. H. Hall), and the bunches were amongst the best in the show; 2nd, G. E. LOMAX, Esq., Huyton, Liverpool (gr. Mr. E. Jones), who had, apparently, Black Hamburgh, but the fruits were unnamed; 3rd, J. BRINTON, Esq. There were five exhibitors.

Madresfield Court.—There were only three exhibits of this handsome Grape, but the pair of bunches from J. DRAKES, Esq., Market Rasen (gr. Mr. W. Parker), were extremely good in size and colour, the only fault consisting in the rather small size of the individual berries. 2nd, Col. FRANCE HAYHURST, who had much better berries, but smaller bunches. Many judges would have awarded them the 1st prize. 3rd, S. BARKER, Esq.

Black Alicante.—Six exhibitors staged pairs of Black Hamburgh, and those who gained the 1st prize for Col. HAYHURST were very fine specimens, being particularly heavy and well-coloured; 2nd, G. E. LOMAX, Huyton, Liverpool (gr. Mr. E. Jones); 3rd, H. ST. MAUR, Esq., Newton Abbot (gr. Mr. G. F. Richardson).

Any other Black Grape.—The variety Apple Towers, shown by J. DRAKES, Esq., gained the highest distinction. These specimens were very fine indeed in all respects. The 2nd prize was awarded to Alnwick Seedling, shown by J. STONE, Esq., Roby, Liverpool (gr. Mr. D. McKelvie); and Gros Colman was 3rd, shown by Mr. W. FAULKNER, Birkenhead.

Muscat of Alexandria.—In this class for the most popular Grape, there were five exhibitors. J. DRAKES, Esq., showed extraordinarily large, tapering bunches of only moderate-sized berries of fair colour. The 2nd prize was again awarded to much handsomer berries, of extra large size, but smaller in bunch, shown by H. ST. MAUR, Esq.; 3rd, Col. MELLOR, Tan-y-Bryn (gr. Mr. C. Price). In the class for single bunches of the same variety there were seven exhibitors. The 1st prize was won by J. DRAKES, Esq., with a very long, tapering bunch of well-coloured berries of moderate size; 2nd, Lord HARLECH, with a heavy, good bunch, of moderately good shape, and 3rd, the Duke of WESTMINSTER, Eaton Hall, Chester (gr. Mr. N. F. Barnes).

Any other White Grape.—Two very fine bunches of Chasselas Napoleon, shown by H. E. ATTENBOROUGH, Esq., Daventry (gr. Mr. A. Child), gained the 1st prize in the class for any White Grape, excluding Muscat of Alexandria; the 2nd prize was awarded to Buckland Sweetwater, shown by G. E. LOMAX, Esq., and the 3rd to Chasselas Napoleon, shown by Col. FRANCE HAYHURST.

LOCAL CLASSES FOR GRAPES.

There were five classes for Grapes grown in the county of Salop. In these, the prizes were gained as follow: For *Black Hamburgh*: 1st, Duke of SUTHERLAND (gr. Mr. G. Adams); 2nd, Lord TREVOR. *Madresfield Court*: 1st, Lord HARLECH; 2nd, Lord TREVOR. *Any other black Grape*: 1st, Lord HARLECH; 2nd, Dr. RAMBAUT BICTON (gr. Mr. Jones). *White Muscats*: 1st, Lord HARLECH, with Muscat of Alexandria; 2nd, Capt. HEYWOOD-LONSDALE, (gr. Mr. J. Mills), with the same variety. *Any white Grape, Muscat of Alexandria excluded*.—1st, Lord HARLECH, with Foster's Seedling.

OTHER KINDS OF FRUITS.

Peaches.—These fruits and Nectarines were shown in first-rate examples. The 1st prize for eight Peaches was won by Lady HENRY SOMERSET, who showed Bellegarde. 2nd, Mr. S. BARKER, with extra-fine fruits of Belle de Doué; 3rd, A. HEBER PERCY, Esq., Hodnet Hall (gr. Mr. Catt). There were 13 exhibits in this class.

Nectarines.—There were 12 exhibits of eight Nectarines, and the best fruits were the variety Pineapple, shown by Lady HENRY SOMERSET; 2nd, Executors of Lady ASHBURTON, Romsey (gr. Mr. Hall); 3rd, the Marquis of NORTHAMPTON, Castle Ashby (gr. Mr. A. R. Searle).

Apricots.—Of 10 exhibits of Apricots, the best was shown by Mr. A. LANGSTON, Wychbold, who had the variety Large Early; 2nd, Capt. HEYWOOD-LONSDALE; 3rd, Major A. H. O. LLOYD, Seaton Knolls (gr. Mr. Pritchard).

Melons.—There were 14 green-fleshed Melons, the best fruit being shown by the Marquis of NORTHAMPTON. There were 15 scarlet-fleshed fruits, and the 1st prize was gained by Lord BELPER with "The Manchester." The best fruit amongst 14 white-fleshed Melons was shown by Mrs. F. ALDERSON, Welsh Frankton (gr. Mr. Davies).

Gage Plums.—Among seven exhibits of Gage Plums, 12 fruits to a dish, the best was from the Marquis of NORTHAMPTON, who showed Jefferson; 2nd, Duke of WESTMINSTER.

Purple or red Plums.—The Marquis of NORTHAMPTON won the 1st prize with the variety Kirke's, and the Duke of WESTMINSTER the 2nd prize.

Cherries.—The best Cherries were shown by Col. FRANCE HAYHURST.

Six dishes of hardy fruits.—This class was confined to Shropshire exhibitors. Capt. HEYWOOD-LONSDALE won the 1st prize in this class, showing red and white Currants, Cherries, Gooseberries, Loganberries, and Apples; 2nd, A. HEBER PERCY, Esq.

GROUPS OF PLANTS.

The competition in the class for a group of miscellaneous fine foliage plants, in or out of bloom, occupying a space of 250 square feet, was as keen as usual, and the high quality of the exhibits was fully maintained. There were four exhibits. Messrs. JAMES CYPHER & SONS, Cheltenham, gained the 1st prize for a very fine group of choice and well-grown plants. Occupying prominent positions were some choice *Oreocids*, such as *Cattleyas*, *Laelias*, *Oncidiums*, *Vandas*, *Odontoglossums* and *Disas*. These, together with well-coloured *Cedivus*, a fine *Kentia Forsteriana*, and 1 *Lilium*, were very effectively arranged. The whole forming a pleasing group.

Sir G. H. KENDRICK (gr. Mr. J. V. Macdonald) was awarded the 2nd prize for a group in which the outstanding features were some well-grown *Codæums* and spikes of *Phalenopsis amabilis*. *Nandina domestica* was used very effectively in the foreground, and a pleasing background was surmounted by a fine *Phoenix Palm*. The 3rd prize went to Mr. W. VAUSE, Leamington. Prominent among this group were specimens of *Ixora Duffii*, graceful sprays of *Oncidium* and *Lilium speciosum*. An extra prize was awarded to Mr. W. R. MANNING, Dudley, for a lightly-arranged group, surmounted by a fine plant of *Kentia Forsteriana*. This exhibitor made a free use of *Francoa ramosa*, and the group also contained *Cattleyas*, *Laelias*, *Odontoglossums*, and other varieties.

A NEW CLASS.

A new class was provided for a display of indoor and hardy flowering plants and flowers (cut and growing), the whole to occupy a space of 250 square feet. The cut flowers were to be arranged with any kind of foliage and by the aid of arches, stands, hanging baskets, bamboo devices, fitted with tubes or other receptacles for holding water, all at the discretion of the exhibitor. Foliage plants (not Evergreens) were allowed in the display. Flowers grown from Bulbs were also allowed. In awarding the prizes the judges were to take into consideration the quality of the plants and flowers, and the general effect of the exhibit.

This class brought four competitors, the exhibits showing considerable diversity in detail and in arrangement. As a new class, it may be declared a success, the plants showing good cultural skill and the groups artistic arrangement. Plants in this class were limited to those grown in pots, not exceeding 10 inches in diameter.

Messrs. CYPHER & SONS won the 1st prize. At the summit of their exhibit was a good *Kentia Palm* some 10 feet in height, which added to the general effect. Generally speaking, the arrangement was after the style of the premier group in the previous class.

The cut flowers gave a fine colour effect to the whole, and that without the vases being conspicuous. Of the flowering plants used Orchids predominated, notably Cattleyas, Lælias, *Dusa grandiflora*, *Odontoglossums*, and *Oncidiums*. *Francoa ramosa* was also displayed to good advantage. In the background Liliiums and cut Carnations stood out well, whilst the Orchids were blended into the other subjects with fine effect. Brightly coloured Crotons, notably the pendulous and broad leaved varieties, with *Alocasia intermedia* and *Caladium argyrites*, all added to the attractiveness of the group. One fine plant of *Papyrus antiquorum* was afforded a prominent place. Along the front edging were several specimens of *Nertera depressa*, with pots of Lily of the Valley and a few very bright plants of *Nandina domestica*. The groundwork consisted of three arches as prominent features. It was, in many instances,

by a richness of colouring and general bright character. The finish in both the 1st and 2nd prize groups was all that could be desired.

Messrs. ARTINDALE & SONS, of Sheffield, who were awarded the 3rd prize, had a distinct arrangement, in which cut flowers greatly predominated. The background was too upright and formal, forming, so to speak, a wall or screen, from which were suspended five baskets of Carnations—two of scarlet and three of pink varieties. The groundwork consisted of a water design, with a miniature bridge, with Water Lilies floating in the water, and on the bank there were several examples of *Arundinaria Falconeri*. Carnations were used towards the front too freely in stands of pyramidal form, and there were also two suspended baskets of a white variety. The weak point in this group was a lack of finish throughout. The background was surmounted by an in-

Mr. W. VAUSE, with similar kinds; 3rd, Mr. SWANN, Halston Hall (gr. Mr. C. Roberts), with greater variety.

There were four entries in the class for 12 stove and greenhouse plants in 10-inch pots. Lord HARLECH, Brogyntyn (gr. Mr. T. Lambert), and Mr. MANNING having a close contest for the 1st prize, which was given in favour of Lord HARLECH. He had neat, well-flowered examples of *Clerodendron Balfouri*, *Allamanda Hendersonii*, *Rondeletia speciosa*, *Ixora Duffii*, and various *Codiaeums* and *Dracaenas*. Lord HARLECH led for six stove and greenhouse plants, his *Gloriosa superba* being well flowered; 2nd, Mr. J. FARRANT, Cleveland, Shrewsbury.

In the class for a group of miscellaneous plants, in or out of bloom, occupying an area of 100 square feet, restricted to exhibitors in the county of Shropshire, there were two displays.



THE SHREWSBURY SHOW.

FIG. 55.—PORTION OF MESSRS. DOBBIE AND CO.'S EXHIBIT.

difficult to distinguish the cut flowers from the flowering plants. This should be the case in all arrangements of this nature.

The 2nd prize was again awarded to Sir G. H. KENDRIK, Edinburgh, gr. Mr. J. V. Macdonald. There was not the diversity in this exhibit that was such a feature in the premier display. The group was crowned with a fine plant of *Phoenix rupicola*, whilst the groundwork was conspicuous for the lightly coloured Crotons employed, the broad-leaved forms being very prominent. Upon an arch were several cut spikes of *Phalenopsis*. *Rhipsalis* and a carpeting of *Lycopodium obscurum* of a deep bronzy tint. *Nandina domestica* was again a conspicuous feature, this being worked into the front with dwarf plants of Begonias and Frittonias. Only a few cut flowers were employed, but the entire exhibit was marked

conspicuous example of a light Palm. Had it been crowned with light, pendulous Bamboos, it would have been far better. Mr. W. VAUSE was awarded the 4th prize. The foreground of his group was good, but the background was not sufficiently definite in arrangement. It would add greatly to the interest of the exhibits if, in the future, this, or a similar class, could be so arranged as to face all ways. To make this class really effective, more space is most essential.

Messrs. CYPHER & SONS again excelled in the class for 30 stove and greenhouse plants in pots 10 inches in diameter. Besides *Statice*, *Rondeletias*, *Clerodendrons* and *Ixoras*, they had neat examples of *Alocasia intermedia*, *Acalypha hispida* (Sanderiana), *Dracena Sanderiana*, *Allamanda Williamsii*, and *Davallia polyantha*; 2nd,

The 1st prize was awarded to Mrs. SWANN, Halston Hall (gr. Mr. C. Roberts), for a moderate display that needed brighter flowers.

Lord HARLECH showed best of three in the class for 12 miscellaneous pot plants.

SPECIMEN PLANTS.

The large-trained specimen plants made a notable feature in the plant tent. There were three exhibits of 15 stove and greenhouse plants in bloom. Messrs. JAS. CYPHER & SONS, Cheltenham, had no difficulty in winning the 1st prize, showing by far the choicest and largest specimens. They had superb plants of *Statice pectus* and *S. intermedia*; also *Rondeletia speciosa*, *Ixora Shawii*, *I. Duffii*, *Clerodendron Balfouri*, a large plant of *Codiaeum Countess*, and others; 2nd, Mr. W. VAUSE, Leamington, whose

best examples were *Rondeletia speciosa* major and *Erica æmula*; 3rd, Mr. W. R. MANNING, Dudley.

Messrs. CYPHER & SONS also led in the class for six specimens, their *Statice* being again of large proportions and well bloomed. *Alamanda nana* was also shown finely; 2nd, Mr. W. VAUSE.

Lord HAREBURY easily beat his two rivals in the class for six *Dracenas*, being followed by E. VAUGHTON, Esq.

There were two exhibits of six *Caladiums* and both were good. Mr. VAUGHTON was placed 1st for compact, well-coloured specimens; 2nd, J. STONE, Esq., Roby, Liverpool (gr. Mr. D. McKelvie).

In the class for four exotic Ferns, there were four competitors, E. VAUGHTON, Esq., Hands-worth (gr. Mr. C. Kelland), being awarded the 1st prize, having the largest plants, principally tree Ferns—*Dicksonias*; 2nd, Capt. HEYWOOD.

was a magnificent one, and they well merited the 1st prize which was awarded them. In the centre were magnificently-bloomed plants of the rose-pink *Lady Tweedmouth* variety, the petals being pleasingly crimped. They had also fine plants of *Duchess of Cornwall* (dark red), *King of Milan* (scarlet), Mrs. Peter (pale salmon), Miss Ethel Gill (pale salmon, an exquisite shade), and a grand bloom, generally *Lady Darnley* (white), W. Sparshott (yellow), and W. Marshall (scarlet).

Some good *Begonias* were seen in the class for six plants in equal numbers of single and double varieties. Messrs. BLACKMORE & LANGDON won the 1st prize, having grandly-bloomed plants, including Mme. Clara Butt, *Duchess of Cornwall*, M. Gwillim, and unnamed singles; 2nd, T. HAMMOND, Esq., 39, Castle Street, Shrewsbury, with smaller blooms, but well-grown plants.

and King Edward are a few of his other blooms. 2nd, Messrs. M. CAMPBELL & SON, High Blantyre, with a good display; 3rd, Mr. A. R. BAKER, Kings Norton.

In a class for a smaller collection of *Carnations*, from which trailers were excluded, C. ALLEN, Esq., Liverpool (gr. Mr. C. Russell), won the 1st prize with 24 plants; he was followed by C. J. WHITE, Esq., Walsall.

Two pretty displays of winter or pot plants of *Carnations* were staged in the class for a collection of these flowers. Mr. C. F. WATERS, Birmingham, beat Mr. JOHN F. KNIGHT, Waterhampton, having the largest blooms. The new variety named after Edith Waters was conspicuous. *Britannia* was unequalled as a standard, whilst *Enchantress* was as good as ever.

Mr. C. H. HERBERT, Acock's Green, Birming-



THE SHREWSBURY SHOW.

FIG. 56.—MESSRS. WEBB AND SON'S NON-COMPETITIVE EXHIBIT, AS ARRANGED IN THE FRUIT TENT.

LONSDALE, Shavington Hall (gr. Mr. J. Mills); 3rd, Mr. W. R. MANNING, Dudley.

Four *Fuchsias* were best shown by Mrs. JOWETT, Huyton, Liverpool (gr. Mr. E. Bridge), in a class represented by moderately-good plants; 2nd, G. MITCHELL, Esq., Belle Vue (gr. Mr. J. Howells). There were seven exhibits in this class.

Mrs. JOWETT also led for six double-flowered *Pelargoniums*, and R. TAYLOR, Esq., Abbey Foregate (gr. Mr. H. Clift), excelled in the similar class for single varieties, and was placed 1st in the local classes for three double-flowered and three single-flowered *Pelargoniums*.

Messrs. BLACKMORE & LANGDON, Bath, had no competitors in the class for a group of tuberous-rooted *Begonias* in pots, occupying a space of 15 feet by 4 feet. Their group, however,

Mr. HAMMOND led in the local class for *Begonias*, in competition with four other exhibitors, the other displays being only moderate.

Gloxinias were poor. There were three exhibits in the class for 12 plants, shown by FARRANT, E. BEWLEY Esq., Rathgar, Dublin (gr. Mr. T. Cave), and G. BURR, Esq., Oaklands (gr. Mr. A. Jones), who won prizes in the order of their names.

CARNATIONS.

Mr. C. H. HERBERT, Acock's Green, Birmingham, showed grandly in the class for a collection of *Carnations*, the blooms being not only of fine quality, but staged especially well. He employed large epergnes and filled these with separate varieties, building up the groundwork to blend with the epergnes. *Duchess of Cornwall*, *Goldfinch*, *Agnes Sorrel*, *Sir Galahad*, *Hilde-*

ham, was placed 1st for 12 vases of *Carnations* and *Plecters*.

ROSES.

Some good *Roses* were seen in the class for a collection of flowers in an area of 6 feet by 4 feet. Four exhibitors competed, and the groups being adjacent to each other, they made a fine bank of blooms. The 1st prize was awarded to Messrs. GUNN & SONS, Olton; the 2nd to Mr. F. M. BRADLEY, Peterborough, and the 3rd to Messrs. STEPHEN TRESEMER & SON, Cardiff. The blooms in the premier stand were sufficiently good to warrant close inspection. Some of the finer varieties were *Kaiserin Augusta*, *Vierge de Lorraine*, *Mme. Moutan*, *Saint Germain*, *Saint Catherine*, *Queen of Scots*, and *Grass of Parnassus*.

Messrs. ALAN DICKSON & SONS, Newcastle, excelled in the class for 24 plants, staged with

John Stuart Mills, Ulrich Brunner, Brilliant (a grand bloom), Mme. Eugene Verdier, W. E. Lippiatt, Leslie Holland, Bessie Brown, Mrs. Stewart Clark, Her Majesty and Capt. Hayward, of outstanding quality; 2nd, Mr. HUGH DICKSON, Belfast.

These firms reversed positions in the class for 18 blooms, distinct, Mr. HUGH DICKSON's collection embracing notable specimens of W. E. Lippiatt, Caroline Testout, Hugh Dickson, Lyon Rose, Star of Waltham, George Laing Paul, and Chas. Lefebvre.

SWEET PEAS.

The largest class for Sweet Peas was for 18 distinct varieties. The 1st prize included the Eckford Challenge Cup, valued at 25 guineas. There were nine entries, but three were disqualified as not being in accordance with the conditions of the schedule. One of these exhibitors showed Rosie Adams and Minnie Christie mixed; another had a vase of Apple Blossom Spencer mixed with a different sort, whilst the third showed Tom Bolton and Bluebell together. Mr. J. HAYCOCKS, Wrexham, is to be specially commiserated for his oversight, as his flowers were a grand lot. The 1st prize was won by Mr. T. JONES, Ruabon, who showed superbly. He had Dazzler, Queen of Norway, Sveira Lee, Mrs. C. Foster, Audrey Crier, Mrs. C. W. Breamore, Marjorie Linzee, Earl Spencer, Clara Curtis, George Stark, Etta Dyke, The King, Mrs. H. Dickson, Minnie Christie, Elsie Herbert, Mrs. H. Sykes, Tom Bolton, and John Ingman. 2nd, G. H. F. ROBERTSON, Esq., Gresford (gr. Mr. E. Jones), with George Herbert (very fine), Mrs. H. Sykes, Helen Lewis, Mrs. Routzahn Spencer, Nancy Perkin, Etta Dyke, and others. 3rd, Mr. J. FLETCHER, Auchenheath, Lanark.

In the class for 12 varieties, distinct, there was good competition amongst seven exhibitors; one exhibit was disqualified. A fine exhibit put up by Mr. R. HALLAM, Radcliffe-on-Trent, was placed 1st, the colours being bright and the spikes and blooms large. The varieties were Mrs. W. J. Unwin, Nellie Jenkins, Paradise Ivory, Tennant Spencer, Elsie Herbert, Edna Unwin, Nora Unwin, Evelyn Hemus, King Edward (Spencer), Constance Oliver, Mrs. Hardcastle Sykes, and Helen Lewis. 2nd, Mr. F. J. HARRISON, Ulverston, with smaller but refined flowers, Countess Spencer, Constance Oliver, Elsie Herbert, and Sunproof Crimson being some of the choicest.

No fewer than 15 competed in the class for six varieties, distinct, the premier stand being shown by Mr. J. H. EMMETT, Earlestown, Warrington. The varieties were Maggie Stark, Mrs. Routzahn, Nora Unwin, Asta Ohn, Mrs. C. W. Breamore, and Olive Ruffell, the last named resembling Constance Oliver. 2nd, Mr. F. J. HARRISON, Ulverston, with Etta Dyke, Marjorie Willis, Asta Ohn, Paradise Ivory, Evelyn Hemus, and King Edward (Spencer). 3rd, Mr. E. H. SHORTING, The Lawns, Broseley.

Dinner tables decorated with Sweet Peas were very numerous, but the displays were in most cases replicas of each other, pink Sweet Peas and trails of Selaginella being employed in nearly every case. The 1st prize was won by Miss JONES, Wem, who arranged Audrey Crier, with a few coloured leaves of Ampelopsis, sprays of Selaginella, and Asparagus.

ARRANGEMENTS OF CUT FLOWERS.

There is always much interest in the florists' exhibits at Shrewsbury, and this interest is well founded, for the exhibits are quite above the commonplace at exhibitions. We can only refer briefly to some of the more interesting features. The first class was for one bride's bouquet and two bridesmaids' bouquets, their arrangement to be limited to a space of 3 feet 6 inches frontage by 4 feet, 6 inches width. The 1st prize was awarded to Mr. J. KNIGHT, nurseryman, Wolverhampton, whose bride's bouquet was composed of Odontoglossums and Lily of the Valley, and the bridesmaids' bouquets of pink Carnations; 2nd, Mr. W. J. GARDNER; 3rd, THE KING'S ACRE NURSERY Co., Hereford.

The best bride's bouquet was shown by Mr. W. J. GARDNER, and it was composed of mixed Orchids, such as Odontoglossums, Phalenopsis, white Cattleyas, and Cypripediums; 2nd, Mr. ADSHEAD; 3rd, Messrs. BOTTOMLEY & BURTON, Elland, Yorkshire.

Mr. ADSHEAD had the best hand bouquet in a beautiful arrangement of Orchids; 2nd, Mr.

W. J. GARDNER; 3rd, THE KING'S ACRE NURSERY Co. In a similar class, from which Orchids were excluded, the 1st prize was gained by Mr. W. J. GARDNER, who employed Gloriosa in several species; 2nd, Mr. ADSHEAD, with an arrangement of yellow Roses. Mr. W. J. GARDNER had the best featherweight bouquet, and THE KING'S ACRE NURSERIES were awarded the 2nd prize in this class. Mr. W. J. GARDNER had the best basket of cut flowers, and THE KING'S ACRE NURSERIES the best hand basket of cut flowers (Orchids excluded). In the class for a stand of cut flowers for table decorations, not to exceed 18 inches in diameter at the base, the best exhibitor was Mr. W. GARDNER, Altrincham and Hale, who employed Gloriosa superba. Mrs. B. VERNON, Bowden, who was placed 2nd, showed an arrangement of mixed Gloriosas, Anthuriums, Françoas, &c.

HARDY FLOWERS.

The class for a collection of perennial flowers on spaces 10 feet 6 inches frontage, brought forth a very magnificent bank of the best hardy flowers now in season. The exhibits were arranged in the big fruit tent, and during most of the day a very good light fell upon the flowers, which produced an effect of floral splendour seldom equalled. There were seven collections, and some of these were almost of equal value, so fine were the selections. The 1st prize, however, was awarded to Messrs. GUNN & SONS, Olton, Birmingham, whose display was remarkable for the beauty of outline and the pleasing tones that appealed to the eye as the visitor approached the exhibit. The centre was characterised by a first-class bunch of the rich purple Allium descendens, which had a very fine effect. Campanula pyramidalis, Lilium auratum, Chrysanthemum maximum, Montbretia Germanica were a few of the principal features. 2nd, Mr. F. BARNES, Frome, Somerset; 3rd, Messrs. HARKNESS & SON, Bedale, Yorkshire; 4th, Messrs. WM. ARTINDALE & SON, Sheffield. The other exhibitors were Messrs. GIBSON, Bedale, and Mr. R. T. WENT, Llandaff.

There were also some good collections in the class for 18 bunches in not fewer than 12 varieties. Messrs. W. ARTINDALE & SON, won the 1st prize, notable bunches being Silene laciniata, Phlox Sylphide, Scabiosa caucasica, Chrysanthemum maximum, Astilbe Davidii, and a red Gladiolus. 2nd, F. BOUSKELL, Esq., Market Bosworth (gr. Mr. G. Hollis).

A keen competition resulted in the class for 12 bunches, F. ALDERSON, Esq., Welsh Frampton (gr. Mr. G. Davis), being awarded the 1st prize, and Mr. BOUSKELL the 2nd prize.

An outstanding collection of Gladioli was seen in the class for 24 varieties of this border flower. The exhibitors were Messrs. G. MAIR & SON, Prestwick, N.B., and the 1st prize was given them. Especially good were Triomphe de Caen (white), Gargantua (rosy-carmine), Dr. Olmsted (red and white), Rajah (yellow, tipped with rose), and Amiral Cervera (rosy-buff).

Although out-of-season, Chrysanthemums were seen in fine form, especially the winning stand in the class for 12 early-blooming varieties, shown by Mr. W. A. BALLARD, Leicester, such sorts as Nina Blick, Soleil d'Octobre, and Mme. Desgrange being as fine as they are seen in October.

There were eight exhibits in the class for 12 bunches of annuals, and the variety of subjects was most pleasing. There could be no two opinions as to the finest group, the exhibitor being A. E. HUMPHREYS OWEN, Esq., Berriew (gr. Mr. O. Oakley), whose flowers included Lavatera alba, Godetia Schaminii, Cactalia coccinea, a fine, scarlet flower; Zinnia elegans, Salpiglossis, of superb quality; Stocks, Calliopsis nigra speciosa, and Marigold Orange King. 2nd, W. H. BANKS, Esq., Kington (gr. Mr. G. H. Bamfield).

The exhibits in the class for a collection of Cactus or decorative Dahlias, or both, on a frontage for each exhibit of 8 feet 6 inches, were staged in the big fruit tent. There were four exhibits, and the 1st prize was awarded to Messrs. KEYNES, WILLIAMS & Co., Salisbury, who staged a very effective exhibit that gained a good deal of its merit from the inclusion of a considerable number of first-class seedlings; 2nd, Mr. W. CAMPBELL, High Blantyre; 3rd, Mr. J. KNIGHT, Wolverhampton.

Mr. JOHN SMELLIE, Busby, Glasgow, was well to the fore in the class for 24 blooms of Show or Fancy Dahlias, having large, clean, even-

sized, well-coloured blooms of popular sorts; 2nd, Messrs. W. CAMPBELL & SON, High Blantyre.

Equally good were the Cactus-flowered varieties shown by Messrs. KEYNES, WILLIAMS & Co., Salisbury, their blooms being the finest Dahlias of this type in the show. Messrs. BOTTOMLEY & BURTON, Elland, Yorkshire, won the 2nd prize, having larger but less refined flowers.

Mr. H. PEERMAN, Nantwich, showed best in the classes for Dahlias, from which trade growers were excluded.

VEGETABLES.

The Society's class was for 12 dishes, and the prizes offered were £10, £7, £4 and £2—a total of £23. This class brought but four entries. The Hon. VICARY GIBBS, Elstree (gr. Mr. E. Beckett), showed in his usual fine style, and was an easy 1st prize winner with superb samples. He had Onions, Celery, Leeks, Tomatos, Peas, Potatos, Turnips, Cucumbers, Carrots, Cauliflowers, Runner Beans, and Parsnips. Mr. J. HUDSON, Leicester, was placed 2nd, having good Potatos, Celery, Tomatos, Peas, Runner Beans, Cauliflowers, and Onions. 3rd, Sir T. HESKETH, Bart., Towcester.

The trade classes for vegetables, which were dropped last year, again found a place in the schedule. On this occasion the number of entries in the respective classes generally were satisfactory, and the finest vegetables in the show were found in these classes.

Messrs. Sutton & Sons' prizes.—These numbered six, and were of the total value of £25 4s. The class was for a collection of nine dishes. The 1st prize was won by the Duke of PORTLAND, Welbeck Abbey (gr. Mr. J. Gibson), whose exhibits were of exceptionally high quality. The subjects comprised Cauliflowers, Pink Celery, Prizetaker Leeks, Supreme Potatos, A1 Runner Beans, Eclipse Tomatos, Centenary Peas, Ailsa Craig Onions, and new Intermediate Carrots. Mr. J. HUDSON, Leicester, was placed 2nd, having excellent Tomatos, Onions, Potatos and Peas; 3rd, Captain HEYWOOD-LONSDALE, Shavington Hall (gr. Mr. Mills); the Misses HOWELL, Berriew, were placed 4th. There were 10 collections in all.

Messrs. Webb & Sons' prizes.—There were seven of these, of the total value of £18 10s., there being four entries. The Hon. VICARY GIBBS, Aldenham House, Herts. (gr. Mr. E. Beckett) was placed 1st for a superb lot such as was worthy of that famous grower's high reputation. The collection of nine dishes comprised Early Mammoth Cauliflowers, Champion Leeks, Webb's White Celery, Sensation Tomatos, Exhibition Runner Beans, Quite Content Peas, Bountiful Potatos, Ailsa Craig Onions, and Prize-winner Carrots. 2nd, Mr. J. HUDSON, with capital Potatos, Carrots, Cauliflowers and Peas. Sir T. F. HESKETH, Bart., Towcester (gr. Mr. Hallatt), was placed 3rd, and Mr. W. C. GERMAN, Wellington, 4th.

Messrs. Clibrans' prizes.—There were three in number, of the total value of £18. The class brought only three entries. The Marquis of NORTHAMPTON, Castle Ashby (gr. Mr. A. R. Searle), was well 1st, having excellent produce, including Cauliflowers, Leeks, Celery, Peas, Carrots, Tomatos, Potatos, Round Beets, Parsnips, Marrows, Onions, and Runner Beans; 2nd, H. TATHAM, Esq., Kendall Hall (gr. Mr. Gaiger), who had excellent samples; 3rd, A. E. HUMPHREYS OWEN, Esq. (gr. Mr. Oakley).

Messrs. Jas. Carter & Co.'s prizes.—This firm offered six prizes of the total value of £17 10s.; unfortunately, there were only two entries. Mr. GAIGER was awarded the 1st prize for excellent Celery, Cauliflowers, Peas, Tomatos (Duke of York), Intermediate Carrots, Ailsa Craig Onions, and fine giant pink Celery; 2nd, Mr. E. DEAKIN, Hale Hall.

Messrs. Robert Sydenham's, Ltd., prizes.—These numbered five, being of a total value of £15 10s. The class was for collections of eight dishes. Mr. W. JONES, Newtown, was easily 1st, with fine Cauliflowers, White Celery, Leeks, Excelsior Onions, Ne Plus Ultra Runner Beans, Duke of Albany Peas, Scarlet Intermediate Carrots, and Windsor Castle Potatos; 2nd, Mr. E. DEAKIN; 3rd, the Rev. J. DAVIES, Stackpole Rectory; and 4th, Lord WILLOUGHBY DE BROKE, Compton Verney. There were five entries in Messrs. Sydenham's class.

Mr. E. Murrell's prizes.—This nurseryman offered seven prizes, in two classes, of the total amount of £13 10s.—one for a collection of nine dishes; the other for six dishes. In the larger class, Mr. H. PUGH, Newtown, was placed 1st, having choice Celery, Carrots, Cauliflowers, Tomatos, and Potatos; 2nd, C. LOGAN, Esq., Wellington; 3rd, Mr. S. SCOTT, Betton Grange. In the class for six dishes, Mr. T. SANDERSON, Wellington, was 1st, having capital examples.

NON-COMPETITIVE EXHIBITS.

Messrs. JAS. VEITCH & SONS, LTD., Chelsea, showed a group of stove foliage plants, relieved with clumps of flowering subjects, in the centre being a bank of Orchids. Nepenthes on tall stands served to break the contour of the group, these plants being of grand quality. In the body of the group were imposing specimens of *Heliconia illustris*, *Maranta Veitchii*, *Tillandsia Massangeana*, *Dracena Brantii*, *D. Victoria*, *D. Sanderiana*, numerous *Codizums*, and other choice foliage subjects, all of superb quality, and disposed in the most effective manner.

Messrs. JOHN PEED & SON, West Norwood, set up a group of Caladiums, relieved with *Adiantum Ferns*. It was arranged as a bank around one of the tent poles, the top being crowned with Palms. The foliage was not especially large, but the colours were intense, notable examples being *Golden King*, *Duke of Teck*, *Alexander III.*, *C. E. L'ihle*, *fastuosum*, *Mrs. Cresswell*, and *Mme. J. R. Box*.

Messrs. WM. ARTINDALE & SON, Nether Green, Sheffield, had a pretty variety of the scarlet *Silene laciniata*, named "*Purpurea*."

A selection of choice Roses was displayed by Messrs. ALEX. DICKSON & SONS, LTD., Newtownards, the blooms being marvellously fresh. Lyon Rose, Dean Hole, Mrs. David Jardine, Mrs. Charles C. Harrison, bright rose; Harry Kirk, Nita Weldon, and Gloire de Chidane Guinnoiseau are a few of the best in the exhibit.

Messrs. HOBBIES, LTD., Dereham, Norfolk, had a semi-circular group of Roses arranged in one of the recesses in the large fruit tent. There were a few weeping standards in pots, and cut blooms of most types of Roses. In another portion of the same tent Messrs. HOBBIES had a pretty exhibit of Dahlias, varieties of the *Cactus* and *Pæony*-flowered types being alone represented. Some of the *Pæony*-flowered sorts, as *King Leopold* and *Merveille*, were very pretty.

Mr. EDWIN MURRELL, Nurseryman, Shrewsbury, showed a collection of Roses, herbaceous Phlox, Violas, &c.

Messrs. WM. CUTBUSH & SON, Highgate, London, N., and Barnett, Herts, showed a fine group of Carnations, Roses, Coleus, and a few stove plants.

Messrs. H. B. MAY & SONS, The Nurseries, Edmonton, staged a collection of greenhouse Ferns, also crested and plumose varieties of British species. The beautiful *Nephrolepis exaltata* var. *Marshallii*, the most attractive of its class, was shown well, also *Pteris ludens*, with large, sagittate fronds.

Mr. H. N. ELLISON, West Bromwich, also showed Ferns in many varieties.

Mr. WM. ANGUS, Penicuik, showed plants of *Disa grandiflora* and blooms of *Chrysanthemum maximum*.

Messrs. SUTTON & SONS, Reading, showed a miscellaneous exhibit (see fig. 54), which illustrated many of the specialities of this firm. There were excellent Parsnips, Carrots, Cauliflowers, Turnips, Leeks, Cucumbers, Tomatos, Runner and French Beans, Peas, Melons, and other produce. These exhibits were interspersed with such flowers as *Gladioli*, *Liliums*, *Gaillardias*, *Sweet Peas*, and *Montbretias*, the general effect being exceedingly good.

Messrs. WEBB & SON, Wordsley, Staffordshire, were represented by a miscellaneous exhibit, in which fruits, flowers and vegetables were intermixed to produce a good effect (see fig. 56). There were Melons, Tomatos, Cucumbers, Beans, Peas, Carrots, Parsnips, Potatos, Beets, Cauliflowers, and Onions. The flowers included *Sweet Peas*, Carnations, Lilies, and *Astilbes*.

A fine group of fruits, flowers, and vegetables was exhibited by Messrs. DICKSON & ROBINSON, Manchester, Tomatos, Cucumbers, Dahlias, Carnations, Lilioms, Antirrhiums, *Chrysanthemums*, *Phloxes*, and numerous others being shown finely.

Messrs. YOUNG & CO., Hatherley, Cheltenham, exhibited a group of Carnations, well grown and shown.

A large assortment of Roses was displayed by Messrs. W. & J. BROWN, Peterborough, and another group of these flowers was shown by Messrs. JARMAN & CO., Chard, who had also *Sweet Peas*, *Pelargoniums*, Dahlias, *Centaureas*, Apples, and a few vegetables.

Messrs. DOBBIE & CO., Edinburgh, showed a group of *Sweet Peas*, which consisted of the best varieties in commerce, and a few seedlings. In addition to the *Peas*, this firm showed a beautiful arrangement of new varieties of *Cosmos*, *Scabious*, and *Antirrhiums*. Messrs. DOBBIE seldom stage an exhibit that does not contain any Potato; on this occasion there were 30 dishes of excellent (riper) of selected varieties (see fig. 55).

Immediately on entering the large group tent, the eye rested on a very elaborate arrangement of *Sweet Peas*, exhibited by Messrs. JONES & SONS, LTD., Shrewsbury. Pillars on the exterior of the exhibit were decorated with climbing Roses, and connecting these pillars were festoons of *Sweet Peas*, whilst underneath, a very gorgeous effect was produced by a groundwork of *Sweet Peas* and Carnations.

In the tent devoted to *Sweet Peas* trade displays of these flowers were made by Mr. ROBERT BOLTON, Warrington, Carnforth; Mr. H. ECKFORD, Wem; and HUGH ALDERSEY, Esq., Aldersey Hall (gr. Mr. T. Pearson).

Messrs. ROBERT SYDENHAM, LTD., Birmingham, also made a pretty exhibit of *Sweet Peas* in metal stands, and other exhibitors of these flowers were Messrs. W. H. SIMPSON & SONS, Birmingham; Messrs. ISAAC HOUSE & SON, Westbury-on-Trym; Mr. J. STEVENSON, Wimborne; Mr. C. BREADMORE, Winchester.

Mr. A. W. THORPE, Lichfield, showed early flowering varieties of *Chrysanthemums*, including several novelties. Mr. AMOS PERRY, Enfield, had banks of dark and light blue *Delphiniums*, with a background of *Artemisia lactiflora*, and in the centre a pool with *Nymphæas*. The *Delphiniums* were remarkably fine.

Messrs. KELWAY & SON, Langport, Somerset, showed superb spikes of *Gladioli*, having 200000. *Snowdon* is a new white variety of much merit.

Mr. W. L. PATTISON, Shrewsbury, contributed an exhibit of Violas.

Mr. ALBERT MYERS, Sutton Lane Nurseries, Shrewsbury, had a very bright exhibit of *Zonal Pelargoniums*, with a few plants of *Coleus* at the back.

Messrs. DICKSONS, LTD., Chester, showed a good collection of hardy flowers arranged in the form of a bank in the fruit tent. This miscellaneous collection had at its side an exhibit of *Sweet Peas* contributed by the same firm. The *Pea* flowers were excellent in colour and size.

Messrs. ISAAC HOUSE & SON, Coombe Nurseries, Westbury-on-Trym, showed a group of hardy flowers, in which many pretty varieties of *Pyrethrum* were shown in excellent condition, together with other kinds, particularly *Delphiniums* and *Pentstemons*.

An extensive exhibit of hardy plants from Messrs. BAKERS, Wolverhampton, contained a very small water-garden in the centre, decorated with *Nymphæas* in flower, and a few bog plants. *Crinum Powellii* and the variety *alba*, *Rudbeckia Golden Glow*, varieties of herbaceous *Phlox* and a considerable collection of *Sweet Peas* were noticed amongst the hardy flowers. Messrs. BAKERS also showed varieties of the *Pæony*-flowered *Dahlia* as a separate group.

Messrs. PRITCHARD & SONS, Shrewsbury, showed some pretty bowls of Alpines, also Ferns, *Sweet Peas*, *Campanula isophylla*, and, as a separate group, a collection of early-flowering *Chrysanthemums*.

Messrs. HEWITT & CO., Solihull and Birmingham, had a good display of garden flowers, including *Sweet Peas*, Carnations, Roses, and border perennials.

Messrs. GUNN & SONS, Olton, Warwickshire, set up numerous varieties of border *Phloxes*, the beautiful *Viola cornuta*, and other hardy flowers.

Messrs. SEAGRAVE & CO., Norfolk Market Hall, Sheffield, showed *Fansies* and Violas, with a border of Roses, Carnations, and hardy perennials.

Messrs. JOHN FORBES, LTD., Hawick, showed their superb strain of *Pentstemons*, also border *Phloxes*, *Pansies*, Violas, and Carnations.

Messrs. R. WALLACE & CO., Colchester, put up a large collection of the newer *Montbretias*; varieties of *Liliums*—*L. tigrinum splendens* being remarkably good; *Gladioli*, *Pyrethrums*, *Phloxes*, and other garden flowers.

Messrs. WEBB & BRAND, Saffron Walden, showed their specialities in *Hollyhocks*, all of the rosette type and finely coloured.

Mr. R. F. FELTON, Florist, Hanover Square, London, showed several florist's exhibits, particularly a basket of flowers, which was specially pleasing owing to its beautiful outlines. Most of the flowers were Orchids, including *Oncidiums*, *Cattleyas*, *Odontoglossums* and *Cypripediums*, but a few other flowers were intermixed, including a specimen of *Thalictrum*.

Messrs. THOS. RIVERS & SON, Sawbridgeworth, staged well-fruited pot trees of *Peaches*, *Nectarines*, *Plums*, *Cherries*, *Pears*, *Apples*, *Figs* and *Oranges*, with baskets of gathered fruits of the same, the display being finished with a drapery of greenery along the front. The *Peaches* were especially good, small trees of *Kestrel* and *Peregrine* in particular being well cropped. Trees of *Cox's Orange Pippin* Apple were also finely fruited.

The KING'S ACRE NURSERIES, LTD., Hereford, contributed a collection of fruit trees in pots quite equal to the exhibits of this nature the firm have sent to Shrewsbury for some years past. The specimens were well-cropped, healthy-looking trees. In addition, these Hereford Nurseries showed numerous *Roses*, *Eremuri*, and other hardy flowers.

Messrs. STORRIE & STORRIE, Glencarse, Perthshire, showed varieties of *Gooseberries*, some as pyramidal-trained pot plants. These were interspersed with *Island Poppies* of a choice strain, *Coleuses*, *Streptocarpuses*, and *Celosias*.

Messrs. BARR & SONS, King Street, London, had a collection of 60 dishes of vegetables, all of capital quality, including Cauliflowers, Cabbages, *Cos* and Cabbage Lettuces, Turnips, Peas, Marrows, Potatos, Tomatos, Carrots, Beet, Radishes, and Onions; altogether a most interesting group.

Messrs. CLIBRANS, Manchester, had a choice display in the vegetable tent, and covered a broad table with a very inclusive and attractive collection. Aldenham Pink Celery was a prominent feature, as also were the numerous Tomatos, Carrots, Peas, Runner, Butter and Dwarf Beans, Cucumbers, Turnips, Potatos, Marrows, and, not least, the fine clean examples of *Winningsdale Green Cabbage* so fine for summer use.

AWARDS OF MERIT.

Carnation "Mrs. Angus"—A border variety shown by Mr. WM. ANGUS, Penicuik, N.B.

Sweet Pea "Tortoise Shell"—Shown by HUGH ALDERSEY, Esq., Aldersey Hall, Cheshire.

Cosmos "White Queen" and *Scabious* (Dobbie's strain)—Shown by DOBBIE & CO., Edinburgh.

Gladioli "Delicata" and "*Snowdon*"—Shown by Messrs. KELWAY & SON, Langport.

Messrs. STORRIE & STORRIE, Glencarse, N.B., received Awards of Merit for an improved strain of *Coxcomb* and for their *Excelsior* strain of *Island Poppies*.

AWARDS.

LARGE GOLD MEDALS.

Messrs. Jas. Veitch & Sons, Ltd., Chelsea, S.W.; Thos. Rivers & Sons, Sawbridgeworth; and King's Acre Nurseries, Ltd., Hereford.

SMALL GOLD MEDALS.

Messrs. Clibrans, Altrincham; R. Wallace & Co., Colchester; Bakers, Ltd., Wolverhampton; Kelway & Son, Langport; Hobbies, Ltd., Dereham; Sutton & Sons, Reading; Edwin Murrell, Shrewsbury; Webb & Sons, Stourbridge; Jones & Sons, Ltd., Shrewsbury; Alex. Dickson & Sons, Ltd., Newtownards, Co. Down; W. and J. Brown, Peterborough; and Robt. Bolton, Carnforth.

SILVER-GILT MEDALS.

Messrs. John Peed & Sons, Roupell Park Nurseries, S.L.; Hewitt & Co., Solihull; Gunn & Sons, Olton, Birmingham; H. N. Ellison, West Bromwich; Simpson & Son, Birmingham; Dicksons, Ltd., Chester; Isaac House & Sons, Bristol; Wm. Cutbush & Sons, Highgate, N.; Jarman & Co., Chard; Dickson and Robinson, Manchester; Young & Co., Cheltenham; Henry Eckford, Wem; Tom B. Dobbs & Co., Wolverhampton; Pritchard & Sons, Shrewsbury; and Wm. Artindale & Sons, Sheffield.

SILVER MEDALS.

Messrs. Webb & Brand, Saffron Walden; Amos Perry, Enfield; H. B. May & Sons, Edmonton; John Forbes, Ltd., Hawick; Seagrave & Co., Sheffield; Barr & Sons, Covent Garden, London; Storrie and Storrie, Glencarse, Dundee; A. W. Thorpe, Lichfield; Dobbie & Co., Edinburgh; Albert Myers, Shrewsbury; Felton & Son, Hanover Square, London, W.; J. Stevenson, Wimborne; and C. W. Breadmore, Winchester.

BRONZE MEDALS.

Messrs. Robert Sydenham, Ltd., Birmingham; Wm. Angus, Penicuik, N.B.; S. R. Crompton, Macclesfield; W. L. Pattison, Shrewsbury; Hugh Aldersey, Ltd., Aldersey Hall, Cheshire.

ROYAL BOTANIC.

AUGUST 10.—The 71st annual meeting of the Fellows was held at Regent's Park on this date. Mr. Pembroke Stephens, K.C., occupied the chair.

In moving the adoption of the report, the chairman said that a remarkable improvement had taken place in the position of the society. That had been due to hard work on the part of the council during the last 12 months, and amongst those who had worked the hardest were some who had joined the council only recently. The number of Fellows in 1909 was 1,570, while the number now was 1,834.

Some debenture-holders had surrendered their debentures, and the council had offered them life fellowships. In June last year the debenture debt of the society was £24,284, now it was £14,714. In consequence of the surrender of the debentures the society had also saved £1,236 18s. 9d., accrued interest and a sum of £250 14s. 9d., which was an annual charge in respect of interest.

The current liabilities in 1909 were £3,050; in 1910 they were £572. In whatever aspect they looked at the society they could see solid and substantial progress. Their debt was decreasing; the members were increasing in numbers; in current debt they were paying their way, and they were still, he was thankful to say, in possession of their beautiful gardens. One gentleman had written a long letter to the council, full of criticisms and statements, and he (the speaker) would not be using too strong a word if he said mis-statements.

Proceeding, the speaker announced that King George had become a patron of the society.

Mr. C. Barclay Holland seconded the motion for the adoption of the report, which was agreed to without further discussion.

The following retiring members of the council were re-elected:—Mr. A. F. G. Leveson-Gower, Captain John Spinks, Messrs. Montague Hutton, William Wallace, Ernest Callard, Sir William Dunn, M.P., Mr. James C. Marshall, and Dr. G. Granville Bantock.

LAW NOTES.

WILLIAM WOODWARD.

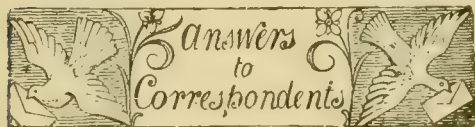
"Excessive interest on borrowed money. losses in crops and shortness of capital" were alleged as the causes of failure of Wm. Woodward, nurseryman, Mythop Nurseries, and 2 Clifton Square, Lytham, near Preston, who appeared for public examination at the Preston Bankruptcy Court on the 5th inst. The official receiver stated that debtor had declared that for three years prior to 1909 he was making an average profit of £300 a year, but that last year, his trading resulting in a loss, he closed down. He commenced business on his own account in 1903 with £900 cash capital and £200 borrowed. In October, 1908, he took into partnership Mr. C. R. Barratt, who

brought into the concern £1,500. The partnership was dissolved in December, 1909, by Mr. Barratt going out, the debtor agreeing to pay him £350, and to take over all the assets and liabilities. Debtor only paid Mr. Barratt £100. The sum of £2,000 of the present liabilities was stated to be in respect of the outstanding debts of the partnership. Debtor said he paid £1,100 for the nurseries. He had borrowed money of moneylenders since the dissolution of partnership. All the borrowed money had gone into the business. There had been a loss on a Tomato crop in 1909 of £540. He had borrowed £200 to pay out his partner, but had paid him £100 and placed the balance in the business. If his assets realised what he anticipated, he would be solvent. The examination was adjourned until September 2.

Obituary.

JAMES MILLER.—The sudden death of Mr. James Miller, gardener, Irvine, took place on August 9. Mr. Miller was employed at Riversleigh House, Irvine, and left home as usual at a little before 6 o'clock in the morning. He arrived at the gardens, and he was engaged in watering at about 7 o'clock. Some time afterwards, on going into the vinery, Mrs. Breckenridge found him lying in a tank containing about 18 inches of water. Medical aid was summoned, but life was found to be extinct. Mr. Miller had for some time been subject to attacks of faintness, and it is surmised that he had been seized with one of these when drawing water from the tank. He was 65 years of age.

DANIEL SPILLANE.—Mr. Daniel Spillane, for more than 40 years gardener and superintendent for Samuel C. Lawrence, Esq., Medford, Mass., died on July 12, in his 68th year. Deceased was born in Cork, Ireland.



APHIS ON PEACH TREES: *J. P. Carlisle.* The foliage is badly infested with black aphid. Fumigations with nicotine compounds will destroy the pest.

APPLE COX'S ORANGE PIPPIN: *R. H. B.* This variety is usually most satisfactory in fruiting. We suspect the trouble is to be found in a too-luxuriant development of growth at the expense of the fruit. If this is the case, root-pruning should be done in November.

AQUILEGIAS: *T.* There is no trace of any insect or fungus parasite on the specimens sent.

BOOKS: *N. A. Lawns and Greens*, by T. W. Sanders, F.L.S., or *Lawns*, by Sutton & Sons, Reading, will be suitable for your purpose. Either work can be obtained from our publishing department. Price 1s. 2d. each, free by post.

CELERY: *J. S.* The Celery leaves are attacked by the fungus *Septoria Petroselinii* var. *apii*. In some seasons this is a serious disease, causing withering or "scorching" of the foliage. Spraying with Bordeaux mixture (4 lbs. bluestone, 4 lbs. quicklime, 50 gallons water), if carried out before the damage has been done, will save the foliage, and is quite safe to use.

CELOGYNE CRISTATA: *T. B., Skipton.* This Orchid usually flowers from the axis of the young growths before the pseudo-bulbs are formed, but occasionally the inflorescence is produced at the top of the pseudo-bulb. We have seen plants of *Ceologyne cristata* with the inflorescence at the apex of a fully-formed pseudo-bulb; and this sometimes occurs in *Odontoglossum crispum*.

CYANIDING MACHINE: *J. W.* The cyaniding machine illustrated in the *Gardeners' Chronicle*, March 31, 1906, p. 202, is made by Mr. F. C. Edwards, 12-15, Warehouse Hill, Leeds, who is the patentee.

GRAPES DISEASED: *Sussex and W. J. M., Isleworth.* The berries are affected with "spot" disease. Spray the bunches with liver of sulphur at the rate of one ½-ounce in two gallons of water, after first removing the diseased

fruits. Do not allow any of the specific to wet the paint on the woodwork, as it will cause it to turn black.

JACOBINIA CARNEA: *S. F. and S.* This greenhouse plant belongs to the natural order Acanthaceae, which includes a number of excellent genera for greenhouse and stove decoration that meet with but little appreciation in these days, for the reason that the flowers, though ornamental and even brilliant in their colours, are more or less unsuitable for use in a cut state. *Jacobinia*, or *Justicia carnea*, as it is sometimes called, is a native of tropical America, and was introduced to this country in 1827. It is an erect-growing plant, and few species are more easy of cultivation. Propagation can be effected by cuttings. By pinching the plant several times in its early stages of growth, good specimens can be obtained in 6 or 7-inch pots, with five or six, or even more, thyrsiform inflorescences of flesh-coloured flowers. *J. chrysostephana*, a yellow-flowered species, has been shown frequently at the R.H.S. meetings in recent years. It is a very old plant, but is not cultivated in private gardens nearly so generally as one would expect to see it, were it not for the craze for cut blooms which has caused the neglect of a number of beautiful flowering plants.

MEALY BUG ON VINES: *W. W.* We do not advise the use of vaporisers for the destruction of mealy bug at this stage. You must look carefully over the vines once a week till the crop is cleared, using methylated spirit to destroy the insects. This can be applied by means of a small paint brush. When the crop is cleared, thoroughly wash the rods with strong soft-soapy water, and, after the winter pruning all the loose bark must be removed from the rods, when they should again be washed with the mixture already mentioned. Repeat this operation two or three times till the vines commence to grow. The house and trellis must also be thoroughly cleansed, and the walls lime-washed. The surface of the border should be lightly forked up, and all the loose soil cleared away, replacing this with freshly-chopped loam.

MICE IN THE GARDEN: *J. Mc.A.* As you find poisons are of no avail in your efforts to exterminate these pests, your best plan is to employ one of the specifics that spread disease amongst them, such as the Liverpool Virus.

MILDEW ON VINES: *W. W. B.* To destroy mildew you should dust the affected parts with flowers of sulphur. Choose a fine morning for this operation. The sulphur can easily be removed, after the berries have commenced to colour, by syringing the bunches with clean rain water.

MUSCATS SHANKED: *L. J.* The berries on that portion of the bunch which has shanked will not ripen—they should be cut off the bunches forthwith. Although there are many causes of shanking, the principal one is some check to the root system. Drought or excessive wet will cause shanking. Your border may be water-logged through bad drainage; if this is the case you must renovate it during the winter and see that good drainage is supplied. If the subsoil is cold and retentive place a thin layer of concrete over it to prevent the roots from entering. Muscats need a rich rooting medium, and the border should be made very firm. It is best to confine the border to the interior of the house, where the roots can be better kept under control. Sudden fluctuations of the temperature must be prevented. In the spring and early summer care should be taken to warm the water before applying any to the roots or using it for syringing purposes.

NAMES OF PLANTS: *W. D. B.* 1, *Polygonum Baldschuanicum*; 2, *Achillea millefolium*; 3, *Linaria cymbalaria*; 4, *Acer campestre*; 5, *Plumeria bicolor*; 6, *Polygonum persicaria*.—*W. A.* 1, *Echinops sphærocephalus*; 2, *Eryngium planum*; 3, *Eupatorium ageratoides*; 4, *Buddleia variabilis*; 5, *Olearia Haastii*.—*Flower Show.* *Tamarix pentandra*.—*A. H., Cromer.* 1, *Erica multiflora*; 2, *Teucrium fruticosum*; 3, *Erica vagans*; 4, *Lonicera involucrata*; 5, *Spiraea discolor*; 6, *Erica stricta*.—*W. T.* 1, *Centaurea macrocephala*; 2, *Poterium canadense*.—*Mrs. Davenport.* *Selinum tenuifolium*, *Lavatera* sp. Send better specimens. Both are perennials.—*E. M. R.* 1,

Lomaria spicant; 2, *Pedicularis sylvatica*; 3, *Potentilla Tormentilla*; 4, *Polygala vulgaris*; 5, *Achillea Ptarmica*; 6, *Stachys palustris*; 7, *Leontodon autumnalis*.—*G. L.* We do not undertake to name varieties of Roses.—*J. W. P.* The Carnations are seedlings which have been raised from a good strain. No. 1 is a pretty white-ground Fancy; 2, purple medium-edged white-ground Picotee; 3 and 4, Fancies, of no great merit; 5, a pretty rose Self for border culture; 6, is not Hayes' Scarlet. This variety was sent out from Great Bookham by Mr. J. Douglas 15 years ago, but it has been superseded by such varieties as Robert Berkeley and Cardinal.—*T. Bury.* *Clarkia pulchella* fl. pl.—*Constant Reader.* *Catalpa bignonioides*, often called *Catalpa syriaca* in gardens.—*F. T.* 1, *Xylobium squalens*, figured in *Botanical Magazine*, t. 2955, as *Maxillaria squalens*; 2, *Calanthe veratrifolia*.—*H. T. S.* 1, *Asplenium polyodon*; 2, *Pteris crenata*; 3, *Cheilanthes fragrans*; 4, *Polypodium alpestre*.—*W. P.* *Odontoglossum constrictum*.—*J. W.* Both *Lælia crispata*.

PEACHES DECAYED: *W. L.* The fruits were too much decayed for us to determine the cause of their failure. Send specimens in an earlier stage of the disease.

PEACHES SPLITTING: *F. D.* This is usually the result of an excess of moisture at the roots, but it may also be caused by imperfect maturation of the wood in the autumn. Mealy bug may be killed by dilute methylated spirits applied with a stiff brush to the affected parts.

PEARS CRACKING: *A. C. Roby.* The cracks in the fruits are the result of a fungus—*Fusicladium pirinum*. During the coming winter, spray the trees with a solution of sulphate of iron, drenching the branches thoroughly. Next spring, when the leaves are expanding, apply dilute Bordeaux mixture, and repeat the application when the flowers are expanding, and again when the fruits have set.

POTATOS DISEASED: *S. L.* The tubers are badly affected with warty disease. Burn all diseased tubers and the haulm after the crop is harvested, and do not use the land for a similar crop for the next two or three years. Obtain next season's seed-tubers from a healthy stock. This disease is notifiable under the new Pest and Diseases Order of the Board of Agriculture and Fisheries (see *Gardeners' Chronicle*, May 21, 1910, p. 377).

SCALE ON SALSIFY FOLIAGE: *R. P. K. & Sons.* The leaves are covered with the White Rust fungus (*Cystopus candidus*). A slight attack of this on the leaves does not, as a rule, affect the growth of the roots, and spraying is not usually necessary. Certain weeds belonging to the Natural Order Cruciferae—particularly Shepherd's Purse—are attacked by this fungus, and should be destroyed, as this disease is not specialised in its parasitism, and can pass from one kind of plant to another. If it is desired particularly to keep the Salsify leaves free, spray them early in the season with Bordeaux mixture (4 lbs. bluestone, 4 lbs. quicklime, 50 gallons water).

SEEDLING BEGONIA: *G. S.* Your seedling possesses several good points, the colour of the flowers being pleasing and the trusses large and of fine shape. But there are similar varieties already in cultivation, and, unless we had these before us for comparison it would be difficult to say if your example exhibits any advance.

THRIPS ON ROSES: *T.* Nicotine is the best specific for destroying thrips. Spray the plants with tobacco water, or one of the proprietary nicotine compounds on the market.

TOMATOS FAILING TO COLOUR AT THE BASE: *D. T.* The hard, yellow portion at the base of the fruit is due to a lack of potash in the soil. Afford the plants some manurial compound containing this constituent.

VARIOUS LEAVES FOR EXAMINATION: *W. T. S.* There appears to be no specific disease present on any of the specimens sent; the injury appears to be due to some error in culture.

Communications Received.—Surrey—J. S.—H. H.—C. T. D.—E. W. & Sons—H. W.—J. F.—J. D.—E. J. L.—M. C. T.—J. W.—A. W.—P. D. E.—Kingston Hill—Dun—A. A.—Subscriber—P. & Co.—P. A.—H. S. T.—L. G.—A. L.—G. G.—S. R. P.—W. I.—R. F.—H. L.—E. C.—J. W. B.—J. S.—M. F.—S. A.—Z. B. Y.—W. J. B.—J. B.—J. J. K.



EREMURUS ROBUSTUS ELWESIANUS, IN MR. H. J. ELWES' GARDEN AT COLESPORNE, GLOUCESTERSHIRE.

THE UNDEVELOPED SPIKES AT THE LEFT OF THE PICTURE REPRESENT A LATE-FLOWERING VARIETY.

THE

Gardeners' Chronicle

No. 1,235.—SATURDAY, August 27, 1910.

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A JOURNEY TO JAPAN.

I.

MARSEILLES, PORT SAID, AND SUEZ.

I LEFT the Royal Albert Docks, London, on February 19, on board the "Sado," bound for Yokohama, my intention being to break the journey at various tropical ports of call, my immediate objective being Ceylon. I was well prepared for study in tropical and sub-tropical climates, and equipped with introductory letters to residents in India and the Far East. My object was to see as much of the world as possible, to study plants and flowers, and horticultural art on every possible occasion.

The "Sado" called at Marseilles one week after leaving London, and I spent a few hours in this Mediterranean port, paid a visit to Park Borely, and to the immediate surroundings of this picturesque place.

At the time of my visit, there was little suggestive of a southern climate. The tramway employes were wrapped in their heavy fur coats, suitable for a Russian climate, and only the height of the sun, the Palms in the gar-

dens, the large-leaved, evergreen Magnolias, and the succulents growing on sunny rocks afforded signs that the country has a winter temperature nearly always above, and never for more than a few hours below, freezing point, and is characterised by much heat in summer. The Almonds were flowering already, so was *Prunus Pissardii*, and the Willows were showing their early, soft-green foliage, so much appreciated in gardens.

In Park Borely, the Chinese Primulas just planted out in beds were in full flower, and *Primula obconica*, which had been left outside all winter, was showing new signs of life. *Iris unguicularis*, *Euphorbia Charicias*, and *Othonnopsis cheirifolia*—the yellow, African species of this genus of the Compositæ—besides some *Jonquillas*, were flowering in the botanical part of the park; whilst *Erythrina*, *Dracæna indivisa* and some *Phoenix* were well preserved against frost by thick wrappings of straw and a layer of mould on the roots.

Chamerops excelsa and *C. humilis*, *Cocos australis*, *Pritchardia filifera*, and *Dasyliroia gracile* were just as healthy-looking specimens as may be seen anywhere in the Mediterranean region without protection.

When our ship left the harbour, the bare rocks could be seen from a point far out to sea, surrounding the town, which is situated on hills, and spreads out far along the foot of the mountain. Within and around the town, between the houses and on the slopes of the near hills, the ground is mostly covered with Pines, and so the place presents a peculiar sight, with its extended shore and the rough mountains to the east and at the back. The shore to the west is not very high above the sea-level, but all the bare rocks and mountains look at sunset like transparent white clouds, with a wonderful bluish tint, much like far away mountains of the high Alps, covered with everlasting ice and snow.

We were soon on the open sea, passed Sardinia and Corsica by the Strait S. Bonifacio next morning, and came in sight of the Straits of Messina.

The picturesque hills of the Calabrian coast and the Sicilian shore show the barracks built for the survivors from the earthquakes, and from the ship could be seen the broken walls of many magnificent buildings.

Port Said was reached on the Sunday at noon, a week after we left Marseilles. The sun was shining, but the southern wind was not very warm. The Arabs wore heavy coats. The new European quarter near the seashore is increasing, and gardens surround every house. The streets in the business part of the European town are partly planted with trees, mostly *Albizia* (*Acacia*) *Lebbek*. (*Lebbek* is the Arabian name of the tree.) It is a fine evergreen tree, with large, Bean-like seed-pods, fully ripe now. Only on very dry places does it lose its leaves; in better situations it forms a fine and a very large tree, all along the Mediterranean coast of Africa, spreading shade all the year round, and displacing deciduous trees, which are not proof against the powerful sun. *Casuarinas*, *Tamarix*, *Ficus elastica*, and *Poinciana* are planted in the gardens, and on the Lesseps Square even a green lawn was to be seen. Other gardens are at the Canal office buildings, and also outside the town, around the waterworks, where there are plantations of Date Palms just beginning to push out their flower-shoots. The Date Palm, *Phoenix dactylifera*, in many varieties, is the tree of the country, and approaching Port Said by ship, the Palms are to be observed even before the low shore is sight. *Eucalyptuses* and *Mimosas* are most remarkable features, but were not flowering yet. *Phyllostachys*, Sugar Cane, Bananas (*Musa*),

Roses, Lantanas, Hibiscus, *Acalypha hispida* were amongst the commoner plants; but I must not forget that wonder of flowers, the *Bougainvillea*. No words can describe the beauty and effect of their violet or purple-coloured blossoms when densely massed together. Not a sign of a leaf could be seen; but flowers!

Pieces of Sugar cane are chewed by old and young folk alike. This was observed particularly in the Arabian market, where the densely packed crowd deals in a great variety of merchandise, mostly old and dirty, and including goats, fowls, rabbits, and eggs, boots and clothes, fruits and vegetables, all in a most undesirable state. Good vegetables are grown in a few well-enclosed gardens at the far end of the Arabian town, and there is also a nursery, where trees for street-planting are cultivated; but, to reach this part, one has to walk through the most dirty town that can be imagined, and only the early time of the year and the cool wind from the south made it possible to pass along the broad or narrow, level or rough places called streets.

The Arabian houses are of varying heights; some look well, but most of them are huts, or more like stables half broken down. Children, goats, and fowls are very plentiful in the streets, but what they live upon is difficult to say.

Our ship having coaled, we passed through the canal in 24 hours. The ship had to stop several times to give way to others, which came in strings of two or three behind each other. The Arabian side of the canal, bare of all plants, consists of sand, and, in the distance, sand, bare rocks, and hills.

All along the Egyptian side, is the fresh water canal bringing water from the Nile. It was laid in order to provide the country along the ship-canal with fresh water, and has done much good. The country is densely covered with many thousands of prosperous farmers, and large plantations of Date Palms. To observe them from board ship requires good glasses and a high position, too, as the sand dug out of the canal is piled high on its sides. The signal stations along the canal are well planted with the different plants and trees already mentioned. The water is pumped by the aid of wind.

Suez was seen at last, backed by very large and numerous plantations of Date Palms. Port Twefik, situated at the end of the canal, and well planted with trees and flowers, was passed, the pilot and the accompanying Arabs—the latter having helped to moor the ship when we had to stop—left us with their boat. We were in the Gulf of Suez, and would soon pass the Red Sea. Colombo was to be our next port. *Bougainvilleas* had greeted us last at Port Twefik, and I wondered which would be the first flower to greet us at the next port? *Fr. Henkel, Darmstadt.*

(To be continued.)

NEW OR NOTEWORTHY PLANTS.

FRUITS OF ANTHURIUM ACAULE.

ALTHOUGH this fine Aroid is not infrequently met with in gardens, yet, so far as my knowledge of it extends, it does not often produce ripe fruits in this country. Ninety years ago Loddiges wrote (*Bot. Cab. t. 483*) that the flowers "sometimes perfect their seeds in this country," so that his experience of it was probably the same as my own. A plant cultivated by Sir Frank Crisp, at Friar Park, Henley-on-Thames, has this month, for the first time, ripened a fine spike of fruit. The spike, which measured

about 18 inches long and $1\frac{1}{2}$ inches through at the base, was covered with white berries. Unfortunately the specimen became decayed and covered with mildew before it could be figured, so that no illustration of it has been prepared. This is to be regretted, as a figure of the fruit of this species would help to abate the confusion which has occurred in recent monographs between *A. acaule*, *A. Huegelii*, and *A. Hookeri*. All three are stemless species very similar in appearance, and each has a large rosette of leaves. They are not always correctly named, and the specimen cultivated by Sir Frank Crisp was grown under the name of *A. Hookeri*, but that species, I believe, is no longer in cultivation. The following notes upon the three species may be useful.

development. The spathe and spadix are produced long before the plant is fully grown, and vary in dimensions according to its size. In adult specimens, the stalks are 2 feet to $2\frac{1}{2}$ feet long, the reflexed, strap-shaped green spathe is 5 inches to 7 inches long and $\frac{3}{4}$ inch broad, and the spadix is 10 inches to 12 inches long and $\frac{1}{2}$ in. thick, becoming, when in fruit, as much as 18 inches long and $1\frac{1}{2}$ inches thick at the base, and tapering upwards like a rat's tail. The colour of the inflorescence is greenish in some plants and dark violet in others; when the anthers are discharging their pollen, the spadix is sweetly scented, the perfume of the form with the violet-coloured spadix being stronger than that of the greenish form. The fruiting spadix is thickly

A. Huegelii.†—This species is also a native of the West Indies, and very like *A. acaule*, but the spadix, although also long and tapering, does not, I believe, attain to such large dimensions. The great distinction, however, between *A. Huegelii* and *A. acaule* is in the berries, which, in the former species, are pear-shaped, being much broader at the apex than at the tapering base. The lower half of the berry is white and the upper purple, whereas in *A. acaule* it is entirely white and spherical.

A. Hookeri.‡—This Anthurium is a native of Demerara, and is a smaller, less leafy plant than *A. acaule*, with differently-shaped leaves, more tapering at the base, more spreading and differently curved veins, and a short, blunt



FIG. 57.—THE 1ST PRIZE EXHIBIT IN THE NEW "GROUP" CLASS AT SHREWSBURY FLOWER SHOW. SHOWN BY MESSRS. JAMES CYPHER AND SONS.

(See page 146, ante.)

A. acaule.*—This was one of the first of the numerous Anthuriums to be cultivated in this country. It is a native of the West Indies, and, according to Loddiges, was introduced in 1790. When fully grown, it forms a grand foliage plant of 5 feet to 6 feet in diameter. It is stemless, with a large rosette of ascending and spreading leaves 3 feet to 4 feet long and 10 inches to 15 inches broad above the middle, narrowing downwards, with a stout petiole 3 inches to 5 inches long. Younger specimens are much smaller, as the plant is several years before attaining its full

covered with white, exserted berries nearly 1-3rd inch long, cylindric in shape, and scarcely or not at all thicker at the apex than at the base. Schott describes the berries of *A. acaule* as "obconoid, scarlet," and this statement is repeated by Engler in *De Candolle, Monogr. Phacnag.*, vol. 2, p. 137-8, but, in his later monograph, *Engler, Pflanzenreich, Arace-Pothoideae*, p. 69, no mention is made of the colour of the berries, possibly because the previous description had been found to be incorrect, for I can find no warrant for Schott's statement that they are red, and believe that he must have mistaken for *A. acaule* the fruit of some other species.

cylindrical (not long and tapering) spadix, which in the type is about 2 inches long and 1-3rd inch thick, but may attain proportionately larger dimensions. This plant is unquestionably distinct from *A. Huegelii*, with which Engler has wrongly united it and given under the name of *A. Hookeri* a description of *A. Huegelii*. In my opinion *A. Hookeri* is identical with the plant more recently (1898) described by Engler as *A. cubense*. *N. E. Brown*.

* *Anthurium acaule*, Schott, *Prodr. Aroid.*, p. 476, syn. *Pothos acaulis*; Loddiges, *Botanical Cabinet*, vol. v., t. 483; Hooker, *Exotic Flora*, vol. ii., t. 122.

† *Anthurium Huegelii*, Schott, *Prodr. Aroid.*, p. 469, and *Icones Aroidarum*, t. 18 20; beautiful figures.
‡ *Anthurium Hookeri*, Kunth, *Enum. Plant.*, vol. iii., p. 71; Schott *Prodr. Aroid.*, p. 472, syn. *A. cubense*, Engler *l. c.* *Jahrb.*, vol. xxv., p. 321; *Pothos crassinervia*, Hooker *l. c.* *Bot. Mag.*, t. 2957, not of Jacquin.

WOBURN PLACE.

THIS beautiful place at Addlestone, Surrey, is the property of E. G. Mocatta, Esq., and the gardens are under the charge of Mr. Thomas Stevenson, so well known in Sweet Pea and Chrysanthemum circles. Most horticulturists who visit Woburn Place in summer are attracted thither by the Sweet Peas, though they soon realise that Mr. Stevenson is much more than one of the best Sweet Pea growers in the country. The glasshouses available for fruit cultivation are not numerous, but a special feature is made of Peaches and Nectarines. These are exceedingly well done, the trees being pictures of health, and all in capital bearing. The varieties most favoured are Hale's Early and Early Rivers Peaches and Lord Napier Nectarine. Belle-garde and Barrington, mid-season sorts, are specially excellent, whilst Sea Eagle and Princess of

Rose garden, which only requires another year or two to make it one of the most charming of small Rose gardens; already the weeping standards and climbers are features. Directly in front of the house, the lawns and flower-garden extend for seven acres. The beds are not crowded together; and are filled with bold masses of colour, which show up well on the wide expanse of grass. The grass is kept perfectly, and the beauty and charm of the whole place is enhanced by the preservation of the natural contour of the land and the avoidance of straight lines and dead levels.

As Mr. Stevenson ranks among the three or four best Sweet Pea growers in Britain, a description of his methods may be appreciated. About 300 running yards of Sweet Peas are grown, the height of the plants, in mid-July, being from 8 feet to 10 feet, the former being the height of the spring-sown plants, the autumn-sown ones being 2 feet taller, besides being in

other. The plants are put out singly, being shaken quite clear of the pot soil, letting the roots down as far into the soil as they will go. Planted in any other way, Mr. Stevenson says, the plants would collapse if drought subvened. A few twigs are placed alongside the plants to support them in their early stages. The method of staking is as follows:—Heavy posts are inserted at the ends of the rows, and wires strained on them, extending the length of the rows. Two thin bamboo canes are inserted at each plant, about 6 inches apart. These canes are 12 feet long, and are tied securely to the wires. From each plant, two leaders are trained up the canes, and they are allowed to flower from the very outset. The tying is done regularly once a week, the ties being thus, in the growing season, about 6 inches to 8 inches apart. In dry weather, copious supplies of water are given, and the ground is mulched between the rows,



FIG. 58.—WOBURN PLACE, ADDLESTONE, THE RESIDENCE OF E. G. MOCATTA, ESQ.

Wales promise great things for later use. Six hundred Chrysanthemums are grown, including the most recent in Japanese and single-flowered varieties. Many of the plants have only recently been stopped (July). Most growers usually stop their plants much earlier than Mr. Stevenson does, but, after all, it is results that tell, and these are invariably attained at Woburn Place. Last season, Mr. Stevenson won outright the King's Cup offered for Chrysanthemums at Windsor, besides forty 1st prizes at other leading shows.

The out-door vegetable and fruit garden extend to about two acres, and the wild-garden to five acres. In the latter is exemplified the advantage of natural over artificial stone-work on the banks of a stream. Where natural stones have been used, most of the plants seem at home and happy; but the reverse is the case where artificial stone has been employed. Adjoining the house, is a

better bloom and producing their flowers on longer, and stouter, stems. They have been in bloom since the end of May, having begun to flower when little over 2 feet high.

The ground is trenched 2 feet to 3 feet deep in winter, incorporating plenty of manure, and a good supply of leaves at the bottom of each trench. With the top spit, some bonemeal and soot are mixed. The nature of the soil is heavy clay, which, under certain conditions, bakes as hard as brick. Mr. Stevenson makes no secret of his methods. Nothing would make him happier than that thousands should grow Sweet Peas as well as he does. In October, he sows his seeds in pots in a cold frame. He winters the plants in the same frame, taking care never to allow them to get too wet. In March, as soon as the ground is in good condition, they are planted out in double lines 1 foot apart.

The double rows are 5 feet apart from each

which keeps the heavy clay soil from getting "puddled."

Everyone who has seen Mr. Stevenson's flowers has been impressed by their superb quality, but for the benefit of those who have not seen them, it may be said they are invariably four and five-bloom sprays of large flowers on stiff footstalks 12 to 18 inches long, according to the variety.

Speaking of varieties, Mr. Stevenson says the Pea which has given the best results this year is Mrs. Hugh Dickson. Other outstanding varieties in his collection are Sun-proof Crimson, Clara Curtis, Etta Dyke, Laverder George Herbert, Mr. C. W. Breamore, John Ingman, Anglian Blue, Princess Victoria, Countess Spencer, Earl Spencer (which is absolutely perfect under shade), Black Knight (Spencer), Silas Cole, Asta Ohn, Mrs. A. Ireland, and The Marquis.

Among novelties not yet on the market, a

variety which was certificated at the Royal Horticultural Society under the name of Prince of Orange, but which has since been named Thomas Stevenson, is "xxx." It seems ahead of all others in its particular colour-class, having a wonderful standard of rich orange, with a trace of rose in the wings. As grown this season, it has not scorched in the sun. It will be introduced by Mr. Sydenham. Henry Eckford (Spencer) is a pale form of Cole's Earl Spencer, and, for all decorative work, it will be most excellent. The flower is large and attractive.

For exhibition purposes, Mr. Stevenson believes in cutting his blooms early and young, and standing them for hours in plenty of water in a cool shed before packing them for the journey.

Mr. Mocatta takes a keen personal interest in all departments of the garden, and Mr. Stevenson is thus fortunate in having a gentleman for his employer who is in full sympathy with all his efforts to excel. W.

NOTES FROM A "FRENCH" GARDEN.

THE favourable weather of the past fortnight has suited the Melons grown under cloches. It is advisable, if not done already, to place the frames and lights over the earlier batch of plants. Ample ventilation should be given during the day time, but the lights should be partially closed at night. The growth of the plants is very luxuriant, especially those which are carrying only one fruit and from which all the extra wood and foliage have been removed to encourage the swelling of the fruit.

The Cucumbers planted at the end of June as a succession crop to the first batch of Melons are in full bearing. The lights must not be removed or the tips of the young fruits will damp off.

As the Melons are cleared, the frames should be removed and the ground hoed for the benefit of the Cauliflowers.

The Lettuces sown early last month have been planted 9 inches apart in beds 4 feet 3 inches wide. The ground is kept damp by watering either early or very late in the day; it is done at these times to prevent the leaves from becoming spotted.

The Cos Lettuces, Grey of Paris, sown at the same period, are planted 18 inches apart each way: this will allow room for the cloches to be placed over them late in September.

If a succession is required, a few seeds of Lettuce, Little Gott, may now be inserted. A mat is placed on the seed bed to keep it sufficiently damp without watering, and is removed as soon as the seedlings appear. This batch is planted under the cloches at the end of September and is marketed about the middle of November.

The last batch of ordinary and Batavian Endive has just been planted in its final quarters. The growth will be hastened by applying frequent and light waterings till September 10 or 20, in order to obtain fine specimens before the wet weather sets in.

It is a suitable time to sow the Spring Cabbage, Ox Heart, in frames or in a well-sheltered corner out-of-doors. The plants should be sufficiently strong for transplanting at the end of October in heavily-manured ground in a favoured position. Seeds of Spring Onion, Little Parisian, should be sown broadcast on a well-prepared seed-bed. This forms a good market crop either sold as green Onions early in April or as fully-grown bulbs in May. They are generally planted on the old Melon beds after the Cauliflowers are cut early in October.

The Carrots and Celery planted on the old manure beds must receive heavy and frequent waterings, to have them sufficiently early, so that the old beds may be broken up late in October.

Carrots must be well thinned to obtain good and strong foliage, which is a great help when bunching the roots for market. P. Aquatias.

NOTICES OF BOOKS.

FRUIT-GROWING IN ARID REGIONS.*

ACCORDING to the statement on the title page, this is an account of approved fruit-growing practices in the inter-mountain country of the Western United States, comprising the States of Colorado, Montana, Idaho, Utah, Nevada, and in northern Arizona and New Mexico, with applications to adjacent regions. One of the

formed the basis of experiment station bulletins, and the substance of most of them has been given at short horticultural courses.

The prevailing opinion that fruit could not be grown in the arid region was fostered locally by the disastrous failures of many of the early attempts at tree growing. The early pioneers were men without experience in the art of irrigation, for, in the Eastern States from which most of them emigrated, it is not needed or practised; hence their lack of



FIG. 59.—WOBURN PLACE: VIEW IN THE PEACH HOUSE; THE VARIETY BARRINGTON IS SEEN IN THE FOREGROUND.

authors, Mr. Wendell Paddock, is a professor of horticulture, and the other, Mr. Orville B. Whipple, a field horticulturist, both in the Colorado Agricultural College and Experiment Station. From the nature of their work, they have spent much time in orchards in the various districts. In a general way, this book should be of value wherever fruit is grown under an irrigation system. Several of the chapters have

* By Wendell Paddock and Orville B. Whipple. 6s. net. Published by Macmillan & Co., London. Crown 8vo. Price, in cloth binding, 6s. 6d. net.

success. The Mormons were the first to grow fruit in the arid section. The authors give the history and development of the fruit industry in Colorado, the next State to take up the business. In 1862, Henry Lee, of Denver, sent from Iowa City to his brother, William Lee, then, as now, living on his farm in Jefferson County, 125 Apple, Pear, Peach and Plum stocks, and, from this small beginning, the fruit industry has grown to very large proportions. In 1902, the total shipments by rail from these fruit districts amounted to 1,956 tons; in 1908

they amounted to 6,498 tons—an increase of 4,500 tons in six years, and, for 1908, an increase of more than 1,700 over 1907.

In preparing the land for planting, water is largely employed for levelling, the water being led to the top of the high ground or knolls, and then allowed to trickle down, carrying the soil with it. In other cases, furrows are ploughed out, and water is run in them as high as possible. This soaks into the soil, and lowers the level several feet in the course of three to four years. Water is usually supplied by "power" companies working in association with those who own the land. Mr. Redmayne is of opinion that much benefit might be derived from the construction of dew ponds.

There are interesting chapters on planting and

INFLUENCE OF EARTHWORMS ON SOIL.

DARWIN first suggested that wherever the common earthworm (*Lumbricus*) finds the conditions of existence, it exerts a most important influence in the formation of the humus surface soil layer, and the limitation imposed upon these conditions by the subsoil has doubtless a great deal to do with the sharp demarcation we often find between it and the surface soil.

The food of earthworms is humus matter; to obtain this, they have to assimilate large quantities of earth which is obtained from the subsoil, and contains, generally, only about one per cent. or less of humus. The earth, while passing through the alimentary canal of the worm, is subjected to the action of its digestive juices,

and water in their burrows, and the chemical effects arising from the digestive process and the final return of their own substance to the soil are of great value. Their habit of drawing after themselves leafstalks, blades of grass, and other vegetable remains into their burrows, is another means of improving both the physical and the chemical properties of land. The uniformity, lack of structure, and loose texture of the surface soil, especially of forests as compared with subsoil layers of corresponding thickness, is doubtless largely due to the work of earthworms.

Another important point is that, in soil thrown up by earthworms, the humus formed under their influence is always of a neutral character and never acid. The work of earthworms is especi-

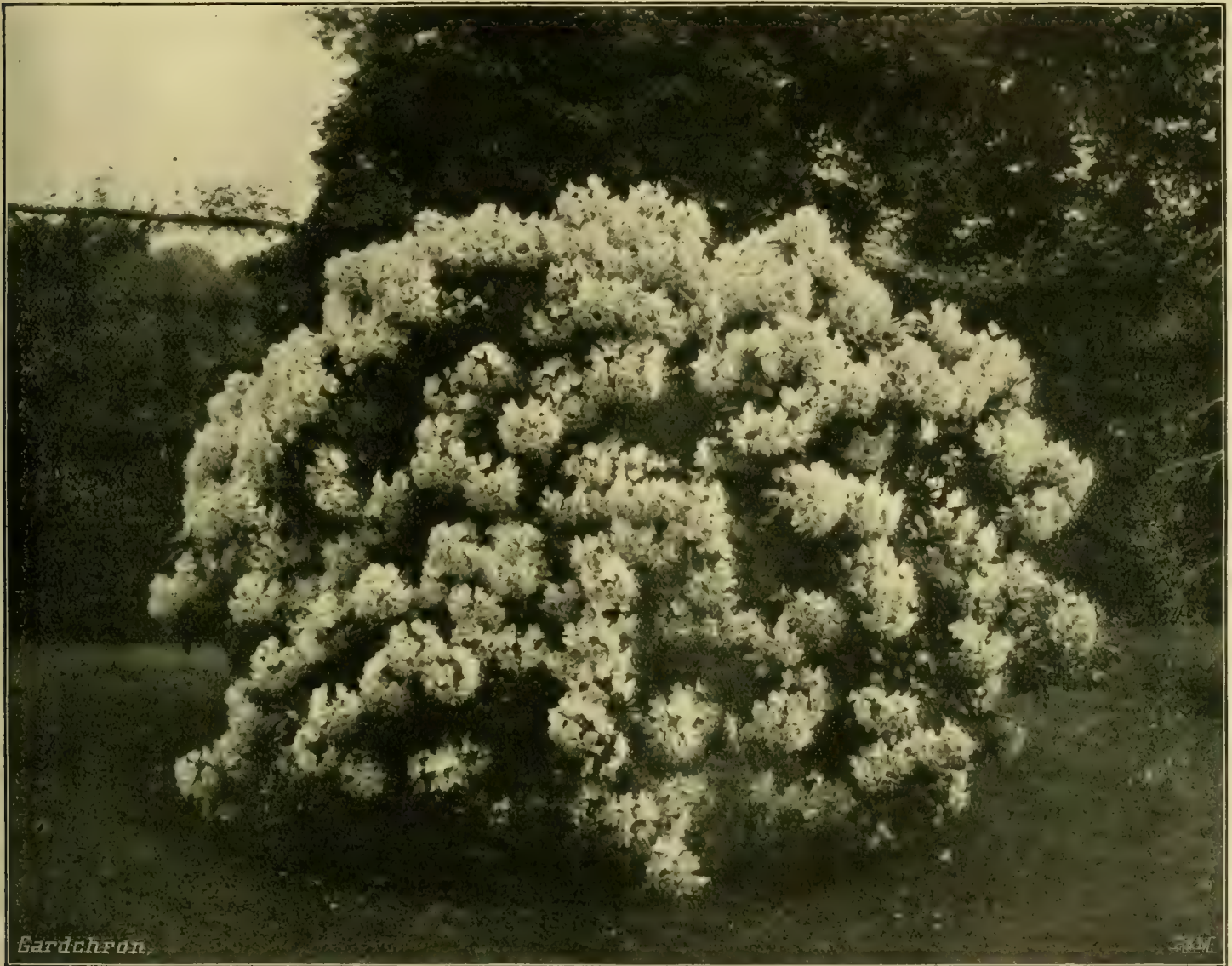


FIG. 60.—WOBURN PLACE: RHODODENDRON CATAWBIENSE VAR. FASTUOSUM FL. PL. ON THE LAWN.

pruning the Apple, Pear, Quince, Plum, and other trees, fertilisers and shade crops, all differing in some ways from our own methods on account of the need for irrigation during the warm season. Anyone interested in fruit-growing in an arid climate will learn much from a perusal of the book, and it should prove especially helpful to settlers in parts of S. Africa, Australia and India.

The articles on insects and insecticides have been adapted from the writings of Professor C. P. Gillette, entomologist of the Colorado Station. The discussion on live-stock on the fruit farm was prepared by Professor H. M. Collrell, superintendent of the Farmers' Institute in Colorado.

which dissolve out the humus and render the mineral particles more soluble to the carbonic acid water of the soil. It is then excreted at the surface of the soil as worm casts, such as may be seen by thousands on the surface of the ground during or after rain.

Darwin calculated from actual observation that in humid climates, in a soil fairly stocked with these worms, the earth thus brought up may amount to from one-tenth to two-tenths of an inch annually over the entire surface. He further estimated that in this manner ten tons of dry earth, per acre, annually pass through the bodies of earthworms and are brought to the surface.

Apart from the mechanical effect worms achieve in loosening the soil, the entering of air

ally effective in loamy soils and in humid regions. In the arid regions of the earth, and in sandy soils generally, the life conditions are unfavourable to the worms, and the perviousness elsewhere brought about by their labours already exists naturally in most cases.

It is stated by Mr. E. T. Seton (*Century Magazine*, June, 1904) that the earthworm is practically non-existent in the arid regions between the Rocky Mountains and the immediate Pacific coast from Manitoba to Texas. In the Pacific coast region, however, it is abundant, and does its work effectively.

It has been calculated that an acre of ordinary agricultural land contains about 50,000 earthworms. The effect of their combined labours in

reducing the soil to a finer condition, as we have seen, is great, whilst they also enrich the surface soil in nitrogen. In old pastures, the production of a close, compact sward is largely due to the fine earth which is brought to the surface by earthworms, to be afterwards crumbled down and levelled by the action of wind and sun.

When earthworm casts are being constantly swept up and carried away from lawns, cricket grounds, and putting-greens, the surface soil gradually becomes exhausted of fertility, the grasses die out, and mosses take their place. *J. J. Willis, Harpenden.*

FRUIT REGISTER.

STRAWBERRIES AT ENGLEFIELD GARDENS, READING.

GIVON'S Late Prolific is one of the best varieties for a dull, wet season, although it does not succeed equally well in all gardens. The soil here is of a medium texture, and seems to suit this particular variety. It can be planted closer than most sorts, as the foliage is not so vigorous as some. It is a free-setting variety, the berries being large, well-shaped, and of bright colour, but they are rather soft, and, for that reason, do not travel well. Kentish Favourite also does well in these gardens, but the fruits, like those of British Queen, do not colour at the tips. The berries are of moderate flavour, and travel fairly well. Scarlet Queen, though an old variety, is still our best mid-season Strawberry, and is good in wet seasons. It possesses a fine flavour, is bright in colour, medium in size, with firm flesh, so that the berries do not bruise in transit. Bedfordshire Champion is a satisfactory cropper, but the berries are soft in the flesh, rather uneven in size, and of medium flavour only. The berries ripen about the same time as Royal Sovereign, being only a few days later. It is not a good variety for a wet season. Royal Sovereign is still the best all-round variety we cultivate, but there are others as useful for furnishing fruits for preserving, such as Vicomtesse Hericart de Thury and La Grosse Sucrée, these being of finer colour. The Strawberry season may be prolonged by planting a bed of Royal Sovereign under a north-west wall. This will not be necessary where a succession can be kept up by later varieties. Royal Sovereign should be planted wider apart than most sorts, as it is a vigorous grower. As soon as the fruits are gathered, all runners, dead leaves, weeds, &c., should be removed and burnt, but the foliage should not be trimmed too severely. A dressing of slacked lime and a good mulch of decayed farmyard manure should be placed well up to the crown of the plants. If choice fruits are required, the plants should not be allowed to remain after the second or third year. Plants which have not been severely forced may be planted out for fruiting the following season. They produce fruits of a good size, although the crop is not a very large one. Where Strawberries are forced in large quantities, a fresh piece of ground should be planted every two years, to provide the necessary runners. All flowers should be pinched off these plants as they develop. The varieties Pineapple, Epicure, and Connoisseur have been planted this summer for trial. Waterloo has not proved a success up to the present. The perpetual-fruiting varieties will provide fruits at the end of the season. Two desirable kinds are Laxton and St. Antoine de Padoue, the former being perhaps the better. The early flowers of these should be pinched off, and no fruits allowed to develop until late in the season. Runners of these placed in pots in August, if kept growing, will produce a supply of fruits in the winter months. *A. B. Woods, Englefield Gardens, Reading.*

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables and Summaries, ante, pp. 77-82.)

(Continued from page 136.)

4, MIDLAND COUNTIES.

OXFORDSHIRE.—Apples, Pears and Plums are very scarce, there being only a few fruits on the lower branches, or where the trees are sheltered from wind. Wall fruits are average crops except Apricots and Sweet Cherries. Strawberries and Currants were both excellent crops, but Gooseberries were not equal to the average. Of Damsons we have none. The soil here is mainly a strong clay, but in some places it is gravel. *F. W. Pearce, Eynsham Hall Gardens, Witney.*

7, ENGLAND, N.W.

LANCASHIRE.—The fruit crops generally are much below the average. Strawberries promised a good and large crop, but the excessive and cold rains, just as the berries were ripening, caused almost all of them to rot on the plants. Gooseberries were an exceptionally light crop, there being scarcely a fruit on some of the trees; the trouble was caused by cold weather when the bushes were in bloom. Bismarck Apple is again one of our best cropped varieties. Our soil is a heavy, retentive loam, with a sub-soil of marl or clay. *E. F. Hazelton, Knowsley Gardens, Prescott.*

—The fruit crops are disappointing: there was a splendid show of blossom, but very few Apples, Pears or Plums set. Gooseberries, Red Currants and Raspberries are average crops. Many Strawberries were spoiled by the rains. The garden is exposed to cold east winds in early spring, and the soil is a heavy, cold clay, lying close to the river. *Thomas Wyton, Abbeystead Gardens, near Lancaster.*

WESTMORELAND.—The fruit crops in this district, with the exception of Pears, are very promising. The following varieties of Apples are well cropped: New Northern Greening, Lane's Prince Albert, Annie Elizabeth, and Stirling Castle. The foliage is healthy, which is largely due to spraying in winter. Strawberries (Royal Sovereign) have been very plentiful. Bush fruits, especially Black Currants, are abundant and good. The soil is light and gravelly, and, naturally well drained, which suits the heavy rainfall of the district. *W. A. Miller, Underley, Kirkby Lonsdale.*

—There was an abundance of blossom on the fruit trees, but cold, east winds, together with frost at the end of April and the beginning of May ruined the prospects of a good fruit year. Such varieties of Apples as Tower of Glamis, Mère de Ménage, Scotch Bridget, King of the Pippins, Annie Elizabeth and Malster are carrying satisfactory crops. Strawberries have been a good crop, although many of the berries were spoiled by the constant rains. Of Raspberries, only Superlative is carrying an under average crop. Some of the canes of Baumforth Seedling, Fastolf and Fillbasket have not broken into growth owing to the severe winter. Black Currants are the best crop amongst small fruits. The garden and orchard are situated low, and are on the limestone. *J. Moorhouse, Dalton Hall, Burton.*

CORNWALL.—An abundance of fruit blossom has been in many cases followed by surprisingly poor crops of fruit. Apples and Pears, whether growing as bush trees, or trained against walls, are equally a failure. Of other wall fruits, Cherries, Peaches and Nectarines have abundant crops. Currants, Raspberries and Gooseberries bear enormous crops of good quality fruits. Strawberries, which usually fruit freely in these gardens, were a partial failure; this was largely due to the inclement weather just as the first fruits commenced to colour. The cause of the

failure of the Apple and Pear crops is somewhat obscure; frosts occurred on only three nights in May, and 4° was the most registered. But the weather during the blossoming period was far from general, and insects were few, and these were probably the causes why so few fruits set. Outdoor Figs are very promising. *A. C. Bartlett, Pencarrow Gardens.*

DEVONSHIRE.—Considering the wet and comparatively sunless summer of last year, we have little to complain of as regards the hardy fruit crops in this district. The trees are not nearly so blighted as they were last season, and small fruits are abundant. Strawberries have been a heavy crop, but many of the berries rotted during the last week in June and early the following week. Figs are plentiful, whilst Peaches and Nectarines are both heavy crops. Our soil is a good, deep loam resting on the old Devonshire red sandstone. *James Mayne, Bicton Gardens, East Budleigh.*

—Apples, Pears and Plums promised well when in bloom, but owing to cold winds and frosts the fruits did not set. A few varieties of Cider Apples are well cropped. Peaches and Nectarines were badly affected with leaf-curl, but aphid has not been so prevalent as last year. Strawberries and Raspberries have given abundant crops, but other small fruits are scarce. Our soil is a sandy loam. The season has been cold and wet, with very little sunshine for this locality. *J. Wilson, Killerton Gardens, Exeter.*

—The fruit crops in this district vary greatly. In sheltered gardens, I have observed good, average crops of most kinds. Apples in some orchards have an average crop, but in the majority of orchards and gardens they are much below the average. Heavy hailstorms and gales prevailed when the Pear and Cherry trees were in flower. Gooseberries and Strawberries have been very plentiful. Late Strawberries were not so fine as the early ones, the plants having suffered somewhat from drought. Speaking generally, the trees and crops of most kinds are very satisfactory. *Geo. Baker, Membland, near Plymouth.*

GLOUCESTERSHIRE.—Apples are under the average, but better than last year. We have good crops on trees of Lord Derby, Ecklinville Seedling, Tower of Glamis, Frogmore Prolific, Lane's Prince Albert, The Queen, Winter Hawthornden, and Domino. Last year, caterpillars were very plentiful. Because of this, the trees were grease-banded in September and some thousands of the wingless female moths were caught. There was a wealth of blossom on trees of Pear, Apple, Plum and Cherry. The farmers in this locality have few apples in their orchards. Our soil is a friable loam overlying the old, red sandstone. *John Banting, Tortworth Gardens, Faldfield.*

—Pears are a fair crop, and have every appearance of being of good quality. Apples are plentiful on some trees, whilst other trees have not a single fruit. Both Plums and Apricots are very scarce. Small fruits of all kinds are very satisfactory. Strawberries have been particularly good; Givon Late Prolific and Laxton's Latest both furnished excellent berries. Our soil is a loam resting on limestone, and requires good cultivation. *F. Walton, Stanley Park Gardens, Stroud.*

—Late spring frosts again destroyed the prospects of a good fruit year. Nectarines and Peaches set freely, but they were damaged by heavy hailstorms and frost during the second week of May, and this notwithstanding the trees were well protected with nets. *Arthur Chapman, Westonbirt, Tetbury.*

—Apples, Pears, and Plums are very small crops. Some Apple trees which were laden with blossom have not a single fruit. Pears are a little better than Apples. Small fruits are record crops, especially Black Currants. The bushes also are very clean. *W. H. Berry, Higham Gardens.*

8, ENGLAND, S.W.

HEREFORDSHIRE.—Strawberries were an extremely heavy crop, but many berries were spoiled by the wet weather. Plums are extremely scarce, and there are few Gooseberries, except in sheltered positions. Peaches, Apricots and Nectarines are thin crops. Black Currants were moderate, but Red and White Currants were both heavy crops. Morello Cherries are the most plentiful of all stone fruits. Peaches, Nectarines and Apricots promised well when the trees were

in bloom and set fair crops, but the cold east wind caused most of the fruits to drop. The soil is a cold clay with a clay sub-soil. *Thos. Watkins, Newport Hall Gardens, Eardisley, R.S.O.*

— Apples are a good, all-round crop in this district, and the trees are clean and healthy. Pears are good and clean and a full crop. Plums are rather scarce, but the trees are healthy. Cherries of the dessert sorts were not plentiful, but Morellos are a fair crop. Small fruits are an average crop. Black Currants were damaged by frosts while the bushes were in bloom. Strawberries have proved a light crop, but the quality was good. Our soil is a sandy loam on sandstone rock. *Thos. Spencer, Goodrich Court Gardens, Ross.*

— I do not remember the fruit crops being so generally bad before. Of small fruits, Gooseberries and Strawberries have furnished full crops, but the Strawberries were considerably damaged by wet weather. Pears and Peaches are light crops, but the fruits promise to be of good quality. Some Apples, more particularly of cider varieties, have fair crops, but, generally, Apples are very scarce. The Plum, Cherry and Apricot trees are almost bare of fruits. Our soil is of a heavy nature, and the situation is low. *T. Coomber, The Hendre Gardens, Monmouth.*

SOMERSETSHIRE.—All fruit trees had an abundance of blossom, but in the case of Apples, Pears, Plums, Damsons and Cherries the crops are very poor. In some places the Gooseberry crop is almost a failure, but we have a good number in these gardens. Black Currants with us are scarce, whilst in some gardens there are good crops. Many of the Strawberries rotted from the excessive wet; two of the best to withstand the rains were Viscountess Haricart de Thury and Waterloo. Many Plums and Morello Cherries dropped during the stoning period. Plants growing in our soil, which is a shallow one overlying the blue lias, have a tendency to develop a sickly yellow colour in the foliage, but heavy dressings of dung and feedings with fertilisers help to keep the crops in good health. *Geo. H. Head, Kingsdon Manor Gardens, Taunton.*

WORCESTERSHIRE.—The fruit crops in different districts are very variable. We have a fair number of Apples on most trees, the fruits being clean and good. During the past two seasons, we have systematically sprayed the trees both during the winter and spring, and the trees consequently are healthy and clean. I adopt the Woburn system of spraying, and I strongly advise other gardeners and fruit growers to do the same. Pears are a small crop but clean. Plums are plentiful in this garden, although below the average in many others; we have had to thin these fruits very freely. Cherries are our worst crop. Peaches and Nectarines are average crops. Gooseberries and Black Currants have been very satisfactory. The Black Currant bushes are examined occasionally, and buds affected with "mite" are closely picked off and burned. Red Currants are not quite so good, having suffered from the effects of a very heavy hailstorm. Our soil is on the new red sandstone formation. *A. Young, Witley Court Gardens, near Worcester.*

— Apple, Pear and Plum trees blossomed with great freedom, but frosts in late April ruined the crops. Strawberries also promised well, but owing to heavy and constant rains, the fruits ripened very slowly, and most of the best berries decayed. Our soil is a heavy loam resting on sandstone. *Ernest Avery, Finstall Park Gardens.*

— The hardy fruit crops are extremely disappointing after such a good display of bloom. Nearly all the best dessert varieties of Apples and Pears are complete failures. The sunless and cold season of 1909 caused the flowerbuds to be imperfectly developed, and it was noticed, when the trees were in flower, there was an almost entire absence of pollen. In large plantations, consisting solely of Cox's Orange Pippin Apple or other high-bred varieties which are known to be constitutionally weak in pollen-producing, the absence of fruits is most pronounced. This shows how necessary it is to plant a number of inferior varieties amongst such choice sorts for the purpose of providing pollen, a practice we adopted some two years ago, and which will be extended. Cherries are a failure. Peaches, Nectarines and

Apricots on walls have satisfactory crops, especially where root-lifting has been constantly practised, as this induces surface rooting and better ripened wood. Strawberries have been abundant, but many berries were damaged by rain. Our soil is a strong clay loam on marl and difficult to work in a wet season. *William Crump, Madresfield Court Gardens, Malvern.*

— All fruit trees blossomed well with the exception of Nectarines, but the fruits set badly, so that the crops generally are very indifferent. Apples only being up to the average. Trees of Ecklinville Seedling, Sterling Castle, Cillini, Keswick Codling, Bramley's Seedling, Annie Elizabeth, Worcester Pearmain, Pineapple Russet, and Cox's Orange Pippin are carrying good crops; other varieties of Apples are under the average. Pears were badly damaged by the frosts and cold winds in May. Only one variety, Backhouse's Beurré, is carrying fruit worthy of note. Plums are a fair crop, the variety Victoria being especially good. Peaches also suffered from the late frosts, but we have a satisfactory crop, although they did not require thinning. The wood of Peaches and other fruit trees did not mature last season, and I am afraid this will be the case again this year. All small fruits were good, Strawberries especially. But bush fruits did not keep so long as usual owing to the heavy rains in the early part of July. Cherries were under the average, but of good quality. Our soil is a medium to light loam, with a gravel sub-soil. *A. C. Lehane, Sherborne Gardens, Malvern Wells.*

WALES.

DENBIGHSHIRE.—Considering the unripened condition of the wood, owing to the wet and sunless autumn of 1909, fruit trees generally blossomed well. But cold winds prevailed when the blooms were expanding and most of the fruits were destroyed. Strawberries promised well up to June 28, but after that date heavy rains caused the berries to rot, resulting in one of the worst Strawberry seasons on record. Our soil is a light loam with a sandy sub-soil. *J. Martin, Bryn Etyrn Gardens, Wrexham.*

— The fruit crops in this district are a failure. Apples and Pears flowered well, but the fruits did not set owing to the unripened condition of the wood. Plums would doubtless have set a fair crop, were it not for the numerous bullfinches, which I am not allowed to destroy. Because of this, the Plum crop is a failure. Our soil is a heavy clay, overlying a subsoil of clay. *J. A. Jones, Chirk Castle Gardens, Ruabon.*

GLAMORGANSHIRE.—Apples, Pears and Plums are only average crops, although at one time there was every prospect of heavy crops of these fruits. But cold nights and winds during April and the early part of May, in conjunction with the wet and sunless summer of last year are the causes of the deficiency. Peaches, Nectarines, Strawberries and all small fruits are very plentiful and good. Our soil is a light loam, the sub-soil being gravel. *R. Milner, Margam Park Gardens, Port Talbot, South Wales.*

— The Apple crop generally in this district is very deficient. Pears are an average crop and of good quality. Plums are a failure. Peach and Nectarine trees are looking well, being free from blight, and the fruits are very good; Raspberries are an excellent crop, and Strawberries were good, the berries being very fine. The soil here is a rather heavy loam on a rocky sub-soil. *C. T. Warmington, Penllergaer Gardens, Swansea.*

MERIONETHSHIRE.—Large fruits, such as Apples, Pears, and Plums, are very scarce. Small fruits are well up to the average, and the quality generally is good. Strawberries were damaged by the constant rains, many of the berries rotting. Loganberries and Raspberries are heavy crops. The fruit trees are remarkably free from aphid this season. Trained Apple trees were bare of blossom, whilst unpruned trees had a wealth of flowers, and fruits on the latter have set fairly well. Our soil is of a moderately light character, with a gravel sub-soil, and crops suffer badly during periods of drought. *J. S. Higgins, Rhûg Gardens, Corwen.*

PEMBROKESHIRE.—The crops of Apples, Pears, and Plums are almost a failure in this district. The weather was wet and stormy when the trees

were in bloom. Apple trees on walls are carrying a good crop, but fruits are very scarce on pyramid and standard trees. Pears also are a failure on pyramid trees, but we have a few fruits on the wall trees. Plums, including Damsons, are a total failure. The trees were too heavily cropped last year to expect a good fruit season this year. *George Griffin, Slebeck Park Gardens, Haverfordwest.*

— The cold spring adversely affected the fruit crops generally. Many Apple trees developed very little blossom, and flowers which did appear failed, in some instances, to set; consequently there are few Apples in this district, many Apple trees in these gardens being without a single fruit. Pear trees blossomed freely, but the fruits set badly and are scarce; Peaches on south walls are exceedingly good, both in quantity and quality: the trees were well protected whilst they were in bloom. Plums, with the exception of Green Gage, are an average crop. Sweet Cherries are plentiful and of good quality, but Morello Cherries are scarce. Among small fruits Gooseberries are plentiful and good; Currants and Raspberries are plentiful; Strawberries were an abundant crop, although many berries were spoiled by the rains. Royal Sovereign has been very fine, and Givon's Late Prolific produced grand fruits. The soil here is a light loam, resting on slate stone. *W. A. Baldwin, Clynfaw Gardens, Bonmahon.*

RADNORSHIRE.—The fruit crops in this district are very much under the average, especially Apples. Small fruits are not extra plentiful, but we have a fair crop, Raspberries being the most plentiful. Early Strawberries promised well, but the greater part of this crop was ruined by the wet weather. Nuts are a poor crop, with the exception of one Walnut tree, which is loaded with nuts. The soil here is a good, deep, medium loam, resting on the red sandstone. *J. MacCormack, Maeslluch Gardens, Glasbury, Hereford.*

— The cold spring seriously affected the Pear and Plum crops, whilst bullfinches destroyed the greater portion of the Apple blossoms, where unprotected. The Strawberry crop was a very heavy one, but the rains caused much of the fruits to rot; the berries were large, but deficient in flavour. Currants, Gooseberries, and Raspberries were plentiful. *C. M. Nixon, Ail-y-bryn, Knighton.*

(To be concluded.)

THE ROSARY.

THE ROSE SEASON.

It is pleasing to be able to report such a generally favourable season. I have not seen a trace of the blackish-brown thrip, often so destructive during autumn and late summer. In some seasons, this insect has quite spoilt our lighter-coloured varieties, its effect being far more noticeable upon these than upon the dark-coloured flowers; indeed, upon some of the latter it could frequently pass undetected.

A few varieties that are especially good now are Mme. Ravary, Le Progrès (perhaps the best yellow bedder), Melaine Soupert, Sénateur Mascaraud (a grand yellow Rose and very distinct), Molly Sharman Crawford, Maman and White Maman Cochet, Medea, Lady Roberts, Georges Nabonnand, Peace, Betty, Corallina, Mme. Antoine Mari, and Marie van Houtte, in the Tea and Hybrid Tea sections; Captain Hayward, C. J. Grahame, Victor Hugo, Earl of Dufferin (an erratic and shy bloomer here), Mrs. R. G. Sharman Crawford, Grand Mogul, Commandant Felix Faure, Mrs. John Laing, Ulrich Brunner, and that never-failing Rose, Frau Karl Druschki, among the Hybrid Perpetuals.

Some of the newer Wichuraianas are good late bloomers, especially Delight, Paradise, and Minnehaha. Perhaps I should not class the last-named as newer, but many do not seem to know this grand variety, if I am to judge by my correspondence. It is a far better shaped flower than most of its class, whilst the trusses are very large in size and of fine pyramidal form. With us, it supersedes Dorothy Perkins, lasting fresh

longer, and also continuing in flower after that variety is past. We have had some curious reversions in Dorothy Perkins and its various sports. Rose sports are always liable to revert. A plant of Augustine Guinoisseau has one-half of its shoots carrying fair examples of La France, and a plant of Sir Roland Hill has just produced a really good flower of Charles Lefebvre, from which, of course, it sported. Many examples of this reversion have probably been noticed by other growers.

It will need unusually bad weather to prevent a good autumnal display of Roses this season. In fact, many varieties promise to be at their best about mid-September. Roses with few petals are liable to expand in hot weather before they are developed, and, at any warm period, their beauty is fugitive; but not so in the cooler nights and days of autumn, when such as Georges Nabonnand, Peace, Betty, Melaine Soupert, Corallina, Mme. Hoste, Killarney, and Lady Waterlow retain their form much longer. The last-named is one of the most lasting and decorative of Roses, and is particularly good in autumn. It is beautiful as a semi-climber, and also as a standard, whilst I have never noticed the foliage affected by mildew or red rust. A Rose that is in flower from first to last is Zephyrin Drouhin, a Hybrid Bourbon, introduced in 1873. This is the variety spoken of as thornless. The flowers are large, and only a little more than semi-double; the petals are silvery-pink, the same shade throughout. It is a very lasting Rose, and fragrant. It also retains its foliage well, and seems exempt from mildew. Like Gruss an Teplitz, it makes a good dwarf hedge if not over-pruned. A. P.

The Week's Work.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Surrey.

Dendrobium.—In large collections, some of the *Dendrobiums* will be completing their growth. This may be ascertained when the terminal leaf on the pseudo-bulb has finished growing. Such plants should be placed by themselves at one end of the house, and afforded less water at the roots for a few weeks. Increased ventilation should be afforded, if it can be given without affecting those plants still actively growing, as this will assist the plants to ripen their shoots, for which reason they may also be gradually exposed to more sunshine during the early part of the morning and, in the afternoon, by drawing the blinds up a little earlier. It is not always advisable to remove the plants to cooler quarters immediately they appear to have finished growing, for, about this time, the old roots again become active, not only lengthening but also sending out many rootlets. It is mainly by means of these new roots that the plants are sustained during their flowering period. It is also not advisable to entirely withhold water, as this will be likely to cause a check to the plants, causing them to almost immediately start into growth instead of remaining dormant until after the flowering season. *D. Wardianum* and its hybrids have a special tendency to start growing actively again soon after the previous season's growth is completed. In order to retain a vigorous and healthy constitution, it is necessary that the plants should form only one set of growths each year. These should be well ripened, therefore the drying and resting of the plants should be gradual. When they are properly matured, the plants should be removed to a cool greenhouse, where they are less shaded, and the atmosphere is drier and not so close; but care must be taken to select a position free from draughts or cold winds. Allow the plants to pass gradually from moderate shade to full sunshine, so that the new pseudo-bulbs may soon become hard and plump. The leaves of some varieties will turn yellow, and these should be allowed to remain until they fall naturally. In houses that are devoted to the cultivation of *Dendrobiums*, the obtaining of proper conditions from the growing to the resting stage is a comparatively easy matter, for, when the growth of the plants is ap-

proaching completion, the warmth in the hot-water pipes may be slightly reduced every few days, the amount of ventilation increased, the plants gradually inured to more light and sunshine, and the amount of water used for damping lessened until it is discontinued altogether. Careful judgment should be used in watering the plants when growth is complete. The inexperienced grower should not depend entirely upon the appearance of the compost; owing to exposure to light and air, the surface of the soil may become dry, whilst underneath it is quite wet. After one thorough watering has been afforded, it is good practice to examine the plants every day, and, immediately the newly-formed pseudo-bulbs show signs of shrivelling, and the compost appears thoroughly dry, to again afford water. Plants that are still actively growing must be afforded liberal treatment until the pseudo-bulbs are completely formed. Those of the nigro-hirsute section, such as *D. Lowii*, *D. formosum*, *D. Jerdonianum*, *D. cariniferum*, *D. eburneum*, *D. bellatulum*, *D. velutinum*, *D. senile*, *D. Donnesiae*, *D. Draconis*, *D. infundibulum*, and *D. Jamesianum* do not require such full exposure to light and air as those of the deciduous and semi-deciduous types. When at rest, these should be kept shaded from strong sunshine and afforded sufficient water to keep the pseudo-bulbs plump and the leaves fresh. Plants of *D. formosum*, *D. Lowii*, and the distinct, free-flowering hybrid *D. formoso-Lowii* that are in bloom should be well supplied with water till the flowers fade. These plants produce their flowers at the apex of the current year's growths, the blooms remaining a long time fresh. The following *Dendrobiums* belong to the evergreen or raceme-flowering section:—*D. thrysiflorum*, *D. densiflorum*, *D. Griffithianum*, *D. Schröderi*, and *D. Farmeri*. They will now be in the middle of their growing season, and must therefore be generously treated. When growing freely, they form many large roots, which delight in a good depth of compost. Any plants that are pot-bound may be shifted into larger pots. They grow well in properly-drained Osmunda fibre and Sphagnum-moss, preferring the cooler temperature of the Cattleya or intermediate house to that of the East Indian house. *D. Falconeri*, and its fine variety *giganteum* should be suspended to the roof of the Cattleya house, in a position where at the present time it is not subjected to strong light. Afford the plant liberal treatment and syringe overhead several times each day with tepid rain water.

FRUITS UNDER GLASS.

By B. GOODACRE, Gardener to Sir Ernest Cassel, G.C.B., Moulton Paddocks, Newmarket.

Melons.—Fruiting plants must be given a generous treatment, in order that the Melons may attain to a fair size. Watering must be attended to regularly, as any neglect in this matter renders the fruits liable to splitting. A little extension of the lateral growths above the fruit will help to keep the roots active and the plants in a healthy, growing condition. For a late crop, a batch may be planted now. In the cases of both the earliest and latest crops, it is a good plan to grow the plants in 10-inch or 12-inch pots, for, when the roots are more under control, the growth is sturdy and fruitful. Make up a hot-bed in the usual manner, and plunge the pots to the rims. Allow each plant sufficient room to develop without overcrowding, and train the growths rather thinly on the trellis, so that the shoots may obtain plenty of light. Red Spider is frequently troublesome on late Melons, as fire-heat has to be employed to assist the fruits to ripen. An occasional spraying with some suitable insecticide will keep the pest in check. Make the most of the sun's heat whenever possible, maintaining a temperature of 80° to 85° by day, with a decrease of about 10° by night. Two fruits to each plant will be a fair crop; if more are allowed to develop, the Melons will be rather small. Regular supplies of liquid manure will be necessary, as the plants become established, and when the fruits are set, a top-dressing of fresh compost may be given occasionally. Apply collars, as previously recommended for pot trees, to retain these additions of fresh soil.

Perpetual and Alpine Strawberries.—These may now be moved from the partly-shaded position which they have been occupying, and placed

in full sunshine. Stand the pots well apart, so as to give the plants the full benefit of light and air. The flower-spikes should not be removed after this date if ripe fruits are required in September. In order to maintain a supply of berries well into the autumn, it is advisable to start several batches of the plants at intervals of a few weeks. Directly the fruits are set, gentle forcing may, if necessary, be practised, to have ripe fruit at an early date, but the best late Strawberries are gathered from plants which have been grown without fire-heat. Support the flower trusses with a forked twig, and, if the weather is cold and wet, give the plants the protection of a cold frame, from which they should be transferred to shelves in a cool, airy house, or staged in heated pits, when the fruits are about to ripen. Pay careful attention to watering, and give the plants an occasional sprinkling of some approved fertiliser.

Strawberry layers.—Runners which were potted some time ago are now well established in their fruiting pots. Remove any offsets that may form and spread the plants out as they require increased space. To avoid worms getting into the pots, it is advisable to stand them on a hard bottom of ashes. The position chosen should be fully exposed to the sun, and the plants must receive every encouragement to produce strong, well-ripened crowns.

THE APIARY.

By CHLORIS.

Removing stored honey.—When a rack of sections or shallow frames is full and the cells sealed completely, or the outside ends partially so, raise the rack. If difficulty is experienced in doing this because they are fastened by propolis, use a screwdriver at one corner, and then raise the sections or frame with a screwing motion. To clear the comb of bees without danger to the sealing, place below the rack a board of the same dimensions, having in the centre a "Porter Bee Escape," and if the operation be performed in the evening, the honey will be ready for removal next morning. If the bees are carelessly handled, the cappings of honey will be perforated by them in their desire to gorge themselves with honey. The sections will then drip and their value be depreciated. Remove the honey at once from the apiary to a place of safety, such as a closed room. In taking the sections from the rack remove the wedges, and be careful not to bruise the face of the combs.

Grading and preparing sections.—In order to secure the best prices, grade the sections and clean the woodwork of all brace combs and propolis. This operation must be performed with perfectly clean, dry hands, using a sharp knife for scraping. If the hands are not dry and clean they may soil the white wood. The full and perfectly sealed sections should form the first grade. Those sections in which the honey does not quite fill the entire space, but are otherwise perfect, will form the second grade, whilst those that are not so perfect will form the lowest class. The most imperfect sections may be stored for next year, and will form bait sections to induce the bees to enter and fill the empty sections as soon as they are put on.

Extracting honey.—See that the machine for this purpose is perfectly clean and well oiled. A little care is necessary in oiling the machine, for if too much be used it will work out of the bearings and may find its way into the honey. As soon as the combs are removed from the hives the honey should be extracted, because it is warm from the hive, and when cool sets and will not leave the combs freely. When preparing the frames for the extractor, remove the metal ends, and with a warm knife, holding the frame obliquely, remove the cappings. By holding the frame in an oblique position the cappings fall free of the comb. Reverse the frame, and uncap the cells on the other side. Most machines will take two combs at once. It is not necessary to work the machine rapidly. A moderate pace is best, as then the combs are not injured. When all the combs are empty the cappings may be placed in a cheesecloth bag and suspended to drain in the machine. The combs may be replaced in the racks and returned to the hives for the bees to clean out. Never leave newly-extracted combs about the hives, as this will start the bees robbing the honey from other hives than their own.

PLANTS UNDER GLASS.

By JOHN DONOGHUE, Gardener to JOSEPH PICKERSGILL, Esq., Bardon Hill, Westwood, Yorkshire.

Souvenir de la Malmaison Carnations.—Layers that have been prepared and treated as advised in a previous calendar will now be ready for potting-up singly into large 60-sized pots. Where the stems can be traced without disturbing the other layers, it is an excellent plan to sever them from the parent plants a few days previous to the potting. Care must be taken when lifting the layers from the beds to retain a fair amount of soil about the roots. The potting compost may consist of loam, leaf-soil, and sand, in equal parts. When the plants are potted afford water and place them evenly on an ash base in a cool frame, as near to the glass as possible. Shade them from bright sunshine during the hottest part of the day. Immediately root-action has commenced, abundant ventilation should be afforded to ensure strong, sturdy, short-jointed growths. Extreme care must be exercised in affording water, which should not be given until the plants are well on the dry side. If aphids is detected, fumigate without delay, employing some nicotine compound.

Perpetual-flowering Carnations.—An abundance of bloom is now available from plants which were planted out as advised previously. Plenty of good cuttings can be obtained, and, where space permits, a quantity should be rooted in the usual manner. These will furnish good specimens for another season. The winter-flowering varieties grown in pots have filled their pots with roots, and may with advantage be afforded a top-dressing of some approved fertiliser. Where a deep, span-roofed frame is available, the plants may be placed therein to shelter them from the rain until they are finally planted into their winter quarters.

Caladium.—The plants should be exposed to full sunshine to assist the tubers to ripen. Gradually reduce the amount of moisture at the roots. When the tubers are sufficiently ripened, the pots should be placed on their sides in a suitable place for the winter.

Tuberous-rooted Begonia.—The flowering season of these plants may be considerably prolonged if they are afforded applications of diluted liquid manure alternately with clear water.

Gloxinia.—To raise a batch of plants for early spring flowering, seeds should be sown now in shallow pans. Seedlings should be placed upon shelves near to the glass, in a stove temperature, during the autumn and winter months. As the old plants pass out of bloom, they should be ripened similar to Caladiums, but under slightly cooler conditions.

THE FLOWER GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Hertfordshire.

Lathyrus latifolius.—The Everlasting Pea is most valuable for furnishing a supply of cut bloom. Plants should be established in isolated clumps in various positions in the front of the shrubberies where they will need little attention beyond staking. *Lathyrus latifolius* is suitable for covering trellises, arbours, and similar structures, providing a beautiful display of bloom during the late summer and autumn. Propagation is easily effected by division of the root-stock when the plants are dormant; plants may also be raised from seeds. The white and pink varieties are most commonly met with; the best white sort is White Pearl, whilst grandiflorus produces fine crimson-coloured blooms.

Climbing plants.—Most climbers have made luxuriant growth this season, and the training of the shoots, especially of those that are not self-clinging, has entailed a considerable amount of work. The species of ornamental vines have grown exceptionally freely this year. Their chief beauty will be seen when the leaves colour in the autumn. To have the foliage in the best condition, the plants must be well supplied with moisture whilst they are growing freely; they will also be benefited by applications of liquid farmyard manure, which should be well diluted. When the leaves commence to assume their autumn tints they will require much less moisture than during their season of active growth. Clematis Jackmannii and its numerous varieties is making a fine show at the present time. It forms a handsome subject when trained to a stout stake in isolated parts of the shrubbery. All

climbers should have the superfluous growths removed and, in the case of Rambler Roses, the old flowering shoots should be cut out, tying in neatly the young shoots which will furnish next season's display.

Lavender.—The bushes are now in full flower, and the spikes will soon be ready for cutting, which should be done on a dry day. Lavender is easily increased by means of cuttings, which must be inserted in cold frames, keeping the lights closed until roots have formed. This old garden plant is very effective when massed in beds or interspersed with other shrubs, and it forms an excellent dwarf hedge by the sides of the kitchen or flower-garden paths. The shoots require clipping annually to keep the plant in a proper shape; this should be done directly after the flowers are over. There are several varieties, which differ slightly in habit; the most interesting is *Lavandula spica alba*, the white Lavender, which is equally as hardy and possesses all the other good qualities as the ordinary variety.

The herbaceous border.—All the untidy shoots and dead flowers should be removed, so as to make the border as attractive as possible. The strong-growing perennials will need constant attention in staking and tying. Delphiniums may be easily raised from seeds, but if it is desired to increase the stock of any particular variety, cuttings taken from young growths at the base of the plants should be inserted in sandy soil, and kept close and shaded for a time. The herbaceous Phloxes may also be increased by cuttings inserted now. Pyrethrums may be lifted and divided, potting suitable pieces into 5-inch pots. It will be necessary to keep these in a moist, close atmosphere until they have recovered from the disturbance, but after that fresh air may be admitted freely. The various subjects that are being propagated in frames will need constant attention in such matters as syringing and ventilation; when they have rooted they should be removed to cooler and airy situations.

THE HARDY FRUIT GARDEN.

By A. R. SEARLE, Gardener to the Marquis of NORTHAMPTON, Castle Ashby, Northamptonshire.

Orchard trees.—Trees of Apple, Pear, Damson, and late varieties of Plum carrying good crops of fruit, will be benefited by a copious watering with liquid manure. If this is not obtainable, place a good dressing of well-decayed farmyard manure over the roots, first breaking the surface with the fork. After this is applied, give a good watering by means of the hose pipe or water cart, so as to wash the constituents of the manure into the soil. The water should be applied immediately after the manure has been spread, otherwise the latter will become dry and hard. The soil for several feet around the stems of orchard trees should be kept free from weeds and grass; where the turf has been allowed to encroach, it should be cut back. Keep the grass mown fairly short with the scythe if the orchard is not used for grazing. If sheep or cattle have access to the orchard, make sure that the tree-guards are in good order, or the animals will damage the trees by gnawing the bark.

Plums on walls.—Fruits of early varieties of Plums are ripening fast, and means should be taken to protect them from the birds, as well as from mice and earwigs. Mice are often a source of trouble where stone fruits are ripening, and traps should be set constantly, though cats serve as the best check. Wasps, up to the present time, do not appear to be so numerous as in some seasons, but they may be troublesome later. Choice dessert fruits may be protected from wasps by small muslin bags, or by enclosing the whole tree with wasp-proof netting.

Plums for a succession.—The most prolific and best early dessert varieties of Plums grown here are Oullin's Golden Gage, Blue Rock, Angelina Burdett, Brandy Gage, Denniston's Superb, and Early Transparent Gage. These varieties provide a good succession from the first week in August until early in September. For succeeding those dessert varieties enumerated above, to maintain a good supply of Plums till the end of the season, the following sorts may be recommended:—Jefferson, Kirke's, Lawson's Golden Gage, Reine Claude Violette, Reine Claude du Compté Hathem, Reine Claude de Bayay, Coe's Golden Drop, Late Transparent Gage, and Late Rivers. Culinary varieties of Plums suitable for providing a succession from the end of July until

the end of October include Early Prolific, Czar, Diamond, Belgian Purple, The Sultan, Prince Engelbert, Victoria, Pond's Seedling, White and Red Magnum Bonum, Monarch, Grand Duke, President, and Primate. The two last-named are excellent late sorts and worthy a place in any collection. As each tree is cleared of its crop, the foliage should be given a thorough cleansing with clear water, which should be applied with some force by means of a garden engine or hose. If any insect pests are present, apply soluble paraffin mixed with water, according to the directions which accompany the preparation.

THE KITCHEN GARDEN.

By JOHN DUNN, Kitchen Garden Foreman, Royal Gardens, Windsor.

Cauliflower.—Seeds should be sown on a sheltered border, and in not too rich a soil, to produce a supply of plants for next season's earliest batch. At Frogmore, we make a sowing on some date as near to the middle of September as possible, but, in more northern parts, the seeds should be sown a fortnight earlier. In order to have sturdy plants, the border must be made quite firm before the drills are drawn. These should be at least 9 inches apart, sowing the seed thinly. When the seedlings are large enough, they should be potted in 60's pots and placed in cold pits on a bed of ashes. The lights should be kept off the frames until frost appears, and then they should only be placed on at night-time, to be removed again in the morning. A suitable potting soil is old loam from a spent Melon bed. The planting should be done firmly, as this will assist to keep the plants stocky. Some growers do not favour autumn sowings of Cauliflowers, but it will be found that autumn-sown plants produce much finer heads than those raised in heat in the spring. We grow the following varieties for this batch:—Early Market, Magnum Bonum, Walcheren, and Early London. These are all good varieties, and will be ready for cutting in the order of their names.

Onion.—Spring-sown Onions should be taken up as soon as the foliage begins to decay. The bulbs should be laid in rows thinly, and they should be turned daily until ripe enough for storing in the Onion loft. Bulbs with thick "necks" should be selected for present use.

Globe Artichokes.—Plants from which the heads have been gathered should have the old stems and foliage removed, afterwards forking up the soil and applying a good soaking of liquid manure. In young plantations the plants are throwing up their growths, and will be benefited by a supply of manure water; these will provide a succession well into September.

Colewort.—The ground in which Coleworts and other winter greens are growing should be hoed frequently; in dry weather liberal supplies of water should be afforded these crops. Any blank spaces should be filled up from the reserve plants. Apply a good dressing of soot about the stems previous to earthing up the soil, which should be done in all exposed positions, before the crop is too far advanced.

Turnip.—Proceed with the thinning of this crop as quickly as possible, and dust the foliage in the early morning with soot or fine wood-ashes to keep the Turnip fly in check. There is still time to make another sowing on a sheltered border, if the crops already planted are not sufficient to furnish a supply of Turnips throughout the winter. Make this sowing on a sheltered border, and select some quick-growing variety for the purpose.

Scarlet Runner.—Plants intended for furnishing a late supply of Runner Beans, should have their tops pinched out as soon as they reach the tops of the stakes, in order to produce as many side shoots as possible. If the position is an exposed one it will be advisable to secure the stakes to a wire run from end to end of the rows. Water the plants frequently with manure water.

Cardoon.—The plants should be tied and earthed up as soon as they are large enough. Gather the leaves closely together and wind haybands closely around them prior to packing the soil tightly about them.

Radish.—Make frequent small sowings of this salad. The roots will be much larger and more succulent than those sown earlier in the season, provided that sufficient water is afforded to keep the plants growing freely.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Special Notice to Correspondents.—The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

Letters for Publication. as well as specimens of plants for naming, should be addressed to the EDITORS, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Local News.—Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, AUGUST 30—
Roy. Hort. Soc. Com. meet.

WEDNESDAY, AUGUST 31—
Glasgow and West of Scotland Hort. Soc. Sh. in St. Andrews Halls, Glasgow (2 days). Carlisle Fl. Sh. (2 days). South Shields Fl. Sh. (2 days).

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich—58.9°.

ACTUAL TEMPERATURES:—
LONDON.—Wednesday, August 24 (6 P.M.): Max. 72°; Min. 58°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, August 25 (10 A.M.): Bar. 30.0; Temp. 65°; Weather—Overcast.

PROVINCES.—Wednesday, August 24; Max. 65° Cambridge; Min. 58° Yorkshire.

SALES FOR THE ENSUING WEEK.

MONDAY, WEDNESDAY, THURSDAY AND FRIDAY—
Dutch Bulbs in all varieties, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.

The recent publication of the fifth volume of "The Trees of Great Britain and Ireland" brings this work to its penultimate stage. Though designed originally to occupy five volumes, the authors have found it necessary to extend it to six. The chief characteristics of the work are the thoroughness with which every detail has been carried out, and the determination of the authors not to accept statements unsubstantiated by evidence. The bane of a certain type of garden literature is the fact that it is written by people who have but an imperfect knowledge of their subject. They possess sufficient of the literary faculty, but are compelled to obtain their facts second-hand—mostly from books and periodicals—with the result that their statements are marked not infrequently by inaccuracies from which a first-hand knowledge would have saved them. It is the more gratifying, therefore, that Messrs. Elwes and Henry's work bears on every page direct evidence of original study and observation.

The general scheme of the work has been described in these pages already (see *Gardeners' Chronicle*, December 1, 1906, p. 372, and April 18, 1908, p. 248). It deals chiefly with timber-producing trees known to be hardy in one or more localities in the British Isles. The present volume is devoted to three genera, and the letterpress alone fills some 330 pages. Two of these genera represent, perhaps, the most important groups of cultivated forest trees, namely, the Oak and the Pine; whilst the third, the Cypress, furnishes

our gardens and parks with some of their most attractive evergreen ornaments.

It is many years since the hardy Oaks were exhaustively monographed in the English language, the difficulty and magnitude of the undertaking having deterred perhaps those capable of carrying it out. The Pines constitute a less difficult subject, and both they and the Cypresses have been dealt with in recent works, but nowhere in such a comprehensive and thorough manner as in the present volume.

In a genus which presents so many difficulties as are to be found in *Quercus*, the clear differentiation of the species is of the greatest importance, for it is essential in any attempts which are made to bring about a uniformity of nomenclature. This ideal may prove to be impossible of attainment in this genus, but, nevertheless, the ideal must be pursued. A common defect in botanical literature consists in the evasion of the real points at issue. Even Linnæus himself is not above the suspicion of having shelved a particularly troublesome problem. Messrs. Elwes and Henry appear never to have been content to leave a problem unsolved. Whenever difficulties have been encountered, and they have been very numerous, determined efforts have been made to overcome them, and the efforts have usually proved successful. There is no better evidence of this than the key to the identification of the species given under each genus. On a former occasion, we referred to the great value of these keys. They are the results of careful and detailed study, and, within our own experience, they have proved to be of very great value.

The authors have based their botanical distinctions on vegetative characters alone, rejecting the characteristics of flowers and fruit. Whilst this system of classification must have added to the difficulty of making a working key, it is all the more applicable to everyday use, for, as every arboriculturist knows, many species of Oak fruit rarely, or not at all, in this country. In such a comprehensive genus as *Quercus*, it may not be possible to identify every individual species with absolute certainty; at the same time, by means of the key, the student can narrow down the problem to two or three species, and the final determination can be made by consulting the more detailed descriptions. The elucidation of the species of *Quercus* is helped considerably by numerous outline drawings of the leaf and a portion of the shoot.

The Pines are not only fewer than the Oaks, but are susceptible of easier subdivision by reason of the varying number of needles (leaves) contained in a bundle.

Considering their small number, perhaps no group of hardy trees has presented such confusion in nomenclature as the true Cypresses—as distinct from the *Chamaecyparis* group. The present authors recognise nine species, clearly define their limits, and provide a key to their identification.

The illustrations are admirable half-tone reproductions from photographs. Some represent the trees in their native habitats, and others illustrate remarkable examples in British gardens. The first picture, for instance, illustrates a magnificent trunk of *Pinus Lambertiana* as seen in California; whilst others represent the fine examples which are to be found in such places as Eastnor, Goodwood, Dropmore, Castlewella,

Tortworth, and others whose names are familiar to our readers.

There is some ground for regret that popular, or rather, English names are used exclusively for the titles of the pictures. Some of them are so unfamiliar that we suspect that they are the inventions of the authors rather than "popular" in the true sense of the word. Such names as "Japanese White Pine" for *Pinus parviflora*, and "Algerian Oak" for *Quercus Mirbeckii*, will necessitate for most people a reference to the letterpress in a separate volume to ascertain to which trees they have reference. If English names were desirable, we think their adoption would have been made more likely had the botanical names been printed with them.

The notes on such subjects as cultivation, value of timber, history, and other miscellaneous matters represent the more popular side of the work, and they will secure for it much appreciation from the tree-loving public as distinguished from those whose interests are chiefly botanical.

A circular issued in March last by Mr. C. G. Hopkins, of the University of Illinois Agricultural Experimental Station, deals with the subject of European Practice and American Theory concerning Soil Fertility.

Mr. Hopkins, impressed by the low average of the yield of Wheat in America as compared with that obtained in England, Germany, and other European countries, addressed to the leading agricultural authorities of the chief European countries a letter enquiring of them what, in their opinion, were the causes which have led, during the last 80 to 100 years, to the great increase in yield of Wheat and other cereal crops. The circular in question contains the replies which Mr. Hopkins received from England, France, Germany, and the Netherlands.

Though complete unanimity of opinion was not to be expected, there is a remarkable agreement that the increase of yield has been due, in the first place, to the use of artificial manures and the increased employment of farmyard manures. This is the responsible opinion of the authorities of Holland, France, and of several of the leading agriculturists of Germany. It is also substantially the view of Mr. A. D. Hall, of Rothamsted. Several of the above States estimate that no less than 50 per cent. of the increase has been due to the use of artificial manures, or to artificial manures together with farmyard manure.

Next in order of importance comes better tillage and better cultivation.

As a general rule, the experts attribute only 10-15 per cent. of the increase to selection of improved seed; though one of the authorities consulted, Professor Gerlach, of Bromberg (Germany), attributes a larger share of the increase to selection than to any other cause.

In his attempt to persuade the agriculturists of America to pay more attention to the use of chemical manures—particularly of phosphates and of lime—Mr. Hopkins will have strong support from the European authorities whom he has consulted.

* *The Trees of Great Britain and Ireland*, by H. J. Elwes, F.R.S., and A. Henry, M.A. Vol. v. (Privately printed.)

ROYAL HORTICULTURAL SOCIETY.—The next meeting will be held in the Society's Hall on Tuesday, August 30. At the three o'clock meeting a lecture on "The Effect of Overhead Electrical Discharges upon Plant Growth" will be delivered by Mr. J. H. PRIESTLEY, B.Sc.

NATIONAL HORTICULTURAL SOCIETY OF FRANCE.—At a recent meeting of this society Lieut.-Colonel PRIN, Director of the Royal Gardens, Kew, and M. CHARLES PYNAERT, Editor of the *Revue de l'Horticulture Belge et Etrangère*, were elected corresponding members.

MR. MAURICE FULD.—This gentleman, until recently manager of the firm of Messrs. W. W. RAWSON & Co., Boston, U.S.A., has joined the

WART DISEASE OF POTATOS.—We are requested by the Board of Agriculture and Fisheries to remind growers of Potatos that it is their duty, under the Destructive Insects and Pests Order of 1910, to report to the board all outbreaks of wart disease in counties in which no officer has as yet been appointed by the local authority to receive reports. The penalty for neglecting to report the outbreak is £10. The presence of disease should be again reported this year notwithstanding the fact that it may have existed and been reported last year. A leaflet describing warty Potatos may be obtained on application to the Secretary, Board of Agriculture and Fisheries, 4, Whitehall Place. Letters so addressed need not be stamped.

LOUIS VAN HOUTTE.—M. LE TEXNIER, a well known French writer on historic and literary matters relating to horticulture, is publishing in the columns of our contemporary *Le Jardin* a series of articles dealing with the life and labours of this eminent Belgian nurseryman.

GARDEN LITERATURE.—In the current number of the *Journal of the National Horticultural Society of France* we notice an essay entitled "Some Old English Gardening Books Translated from the French," by Mr. HARMAN PAYNE. The period covered is from 1516, beginning with the *Grete Herball* by PETER TREVERIS, to 1759 with MILLS' translation of DUHAMEL DE MONCEAU's work.



FIG. 61.—WOBBURN PLACE: THE ROSE GARDEN.

staff of Messrs. HENRY F. MICHELL & Co., Philadelphia. Mr. FULD is secretary and founder of the New England Dahlia Society, founder and treasurer of the American Gladiolus Society, and Editor of the *Dahlia News*.

FIGS.—According to Mr. AARON AARONSOHN, Director of the Jewish Agricultural Experiment Station at Haifa, Palestine, the Arabs in Biskra and Egypt cut off the tips of the immature Figs in order to make them ripen. It is said that three days after this is done, the cut Figs become twice as large as those uncut and develop a much better taste.

URBAN ALLOTMENTS.—A vegetable and flower show arranged by the allotment holders renting plots from the West Ham Town Council was held in the Public Hall, Canning Town, on August 20. According to *The Times*, the Corporation charges 5s. a year for a 16 rod plot, and have 585 allotment holders whose gardens are mostly on disused gravel pits, which were subsequently used as dust shoots and have to stand 20 years or so before they can be utilized for building purposes. "Triangle Camp," which was seized by the unemployed a few years ago, is one of the allotments, and the products of this piece of ground took most of the prizes.

CRUICKSHANK BOTANIC GARDENS, ABERDEEN.—These gardens, which have been so serviceable in the teaching of botany at the Aberdeen University, under the curatorship of Dr. JAMES W. H. TRAIL, are to be laid out afresh on an adjoining piece of land purchased by the Cruickshank trustees. The existing gardens, which were formed some 11 or 12 years ago, are not the sole property of the trustees, part being held on lease from a neighbouring proprietor, the tenure being a short one. As soon as practicable, the bulk of the most valuable plants will be transferred to the newly-acquired land, which is not so flat as the site of the present gardens.

THE POLLINATION OF GREEN FLOWERS BY INSECTS.—It is very generally held that only brightly-coloured flowers attract insects, and secure by their visits the advantages of cross-pollination. Professor PLATEAU, however, who does not share this opinion, published as long ago as 1897 a list of no fewer than 79 plants which, though possessed of green or greenish flowers, are, nevertheless, "entomophilous." Since then Professor PLATEAU has extended this list considerably, and in a contribution to the Belgian Royal Society of Botany (Bull. Soc. Roy. Botan. Belgique, xlv, p. 339, 1909) includes among green-flowered entomophilous plants the Orchid *Listera ovata*. Though visited by many insects—Diptera, Coleoptera, and Hymenoptera—the insects which are responsible for cross-pollination are generally ichneumonids, which, on arriving at the flower, alight on the lower part of the labelum, and following the nectariferous furrow from below upward, end usually by getting the pollinia fixed firmly to their heads or other parts of their bodies. In such cases, visits to other flowers of *Listera ovata* result in cross-pollination. Professor PLATEAU concludes from his long-continued observations, that colour counts for little or nothing in securing the visits of insects which effect cross-pollination.

PROF. W. BATESON.—Prof. BATESON, F.R.S., Director of the John Innes Horticultural Institution, has taken up his residence at Manor House, Merton Park, Surrey.

THE VALUE OF SEA-WEED AS MANURE.—An amusing instance of the "law's delays" and of the loss which follows from the attempt to decide by cumbrous legal methods, a relatively simple question is given in *Nature* for August 4. It appears that, according to a report in the *North British Agriculturist*, three farmers were deprived of their rights to gather sea-weed on the fore-shore at Rosyth when the Admiralty resumed possession of the shore. The liability of the Admiralty to compensate was not disputed, the value of seaweed for manurial purposes being the subject of the controversy. According to experts and practical men, this value was placed at sums varying from 1s. to 9s. 3½d. per ton! Finally the arbitrator "split the difference," and allowed compensation on the basis of 4s. 9d. per ton.

THE LATE M. CALVAT'S CHRYSANTHEMUMS.—We understand that the large collection of seedling and other Chrysanthemums forming the stock of the late ERNEST CALVAT have been placed under the care of M. RÉMY, the well-known grower, of Grenoble.

FATAL ACCIDENT TO A GARDENER.—The death of Mr. MEAKIN, gardener to REGINALD LODER, Esq., Madewell Hall, near Market Harborough, occurred under distressing circumstances on the 15th inst. Mr. MEAKIN fell from a ladder whilst pruning a Pear tree and broke his neck, death being instantaneous. He was 53 years of age, and had been gardener to Mr. LODER for about 11 years; he had been previously in the service of Mr. LODER's family nearly all his life. Mr. MEAKIN leaves a wife and six children.

CAMBERWELL PUBLIC PARKS.—Mr. JAMES CHRISTIE has been appointed superintendent of parks, gardens, and street trees under the borough of Camberwell. Mr. CHRISTIE served his apprenticeship under his father at Ragley, afterwards continuing his studies and practice at the Edinburgh Botanic Gardens. Later, he was employed in the gardens of Baron ROTHSCHILD, at Ferrières, Paris, and afterwards at Hyde Park, London. For the last four years, Mr. CHRISTIE has been employed as sub-foreman at Kew Gardens.

FORESTRY AT ABERDEEN UNIVERSITY.—A four-weeks course of lectures for foresters has just been started under the auspices of the Aberdeen and North of Scotland College of Agriculture and the University of Aberdeen. This period of the year has been selected as the time when foresters can most conveniently attend, and it is interesting to note that the expenses of the foresters are being paid by the respective proprietors of the estates on which they are engaged. There was a representative attendance at the opening meeting under the presidency of Dr. GEORGE ADAM SMITH, Principal of the University of Aberdeen. Mr. SYDNEY J. GAMMELL, of Drumtochty and Countesswells, one of the governors of the College of Agriculture, and the president of the Aberdeen, Banff and Kincardine shires branch of the Royal Scottish Arboricultural Society, speaking on behalf of the governors of the College of Agriculture, offered the students a warm welcome. The class is conducted by Mr. WILLIAM DAWSON, B.Sc. In addition to lectures, excursions will be undertaken to woods, nurseries, saw mills and other places in the neighbourhood of Aberdeen, and work in the laboratory will include the identification of specimens by means of the microscope as well as the naked eye.

THE RESISTANCE OF POLLEN OF FRUIT TREES TO FROST.—From experiments made by EWERT, and published in the *Zeitschrift für Pflanzenkrankheiten*, xx., p. 65, 1910, it appears that the pollen of fruit trees is capable of enduring an exposure to very low temperatures: in certain varieties of Apple, as much as 17° C. Since fruit trees are injured by exposure to much less severe cold, it is suggested that the most promising method of obtaining frost-proof varieties is, as we suggested recently in a leading article, by raising parthenocarpic varieties.

EXHIBITION AT PRAGUE.—An important horticultural exhibition will be held at Prague from September 3 to October 15. In addition to the general decoration of the exhibition, for which autumn flowers will be largely employed, two gardens will be formed, one of them representing a tropical region, and the other decorated with architectural subjects and objects of the fine arts. The portion of the exhibition devoted to fruit will be opened on September 28, and exhibits are expected from Bohemia, Moravia and Silesia. Exhibits from districts of Bohemia will be arranged according to their situation and climate. Other subjects of interest will include the classification of fruits and the best methods of packing fruits. The culture of vegetables, for which Bohemia and Moravia are distinguished, will be worthily represented. Other branches of horticulture to be represented are those pertaining to nurseries and parks. There will be models of gardens and nurseries of Bohemia, a school garden, and a commercial nursery. Science and the fine arts will be represented in all sections of the exhibition. A congress of Austrian gardeners will be held from September 27 to 30.

THE PEA CROP IN THE U.S.A.—The indications of a deficient seed crop in the United States were remarked in the gardening Press of that country some time ago. It is now reported that the worst fears of the seed farmers will be realised. Although the exact figures cannot as yet be given, it may be confidently stated that the crop will be at least as short as that of 1909. This will be most unwelcome news to the seed trade, as well as to the canners of the country, for practically no seeds of culinary Peas were saved over from last year, and a good crop this year would have been readily absorbed by the trade. Wisconsin has suffered more severely this year from drought than Michigan.

NATIONAL DAHLIA SOCIETY.—The early exhibition will be held at the Crystal Palace on September 8, 9. There will also be a later show at the Royal Botanic Gardens, Regent's Park, on September 20, 21.

INTERNATIONAL HORTICULTURAL EXHIBITION, 1912.—It has been decided that this exhibition will be held in the grounds attached to the Royal Hospital, Chelsea. The area leased to the exhibition authorities, including the Ranelagh Gardens, is approximately 20 acres, and nearly 16 acres will be directly available for the accommodation of the exhibits. There are many fine specimen trees, which will add greatly to the beauty of the show and facilitate the artistic arrangement of the flowers. Entrance to the grounds can be effected from the Thames Embankment on the one side and from Bridge Street on the other. The grounds are accessible from all parts of London.

A HARDY PLANT SOCIETY.—A meeting of persons interested in hardy plants was held at the George Hotel, Shrewsbury, on the 17th inst., when it was resolved unanimously:—"That a National Hardy Plant Society be formed for the encouragement, the extension, and the improvement of hardy plant culture, whether for the garden, for decorative purposes, or for exhibition, and for the improvement of their nomenclature." A Provisional Committee was appointed with Mr. MACSELF as chairman. Mr. FRANK BOUSKELL was elected as secretary, Mr. J. S. BRUNTON as treasurer, and Mr. R. T. WENT as vice-chairman. The following Provisional Committee was appointed:—Mr. W. IRVING (Kew), Mr. S. ARNOTT (Dumfries), Mr. J. ARTINDALE (Sheffield), Mr. G. GIBSON (Bedale), Mr. F. EAMES (Frome), Mr. W. E. CLARKE (Whitchurch, Cardiff), Mr. G. G. BLACKBOURNE (Kingsacre Nurseries), Mr. R. W. HOSIER (Messrs. BAKERS, Wolverhampton), Mr. G. C. MUDGE (Messrs. Barr), Mr. E. G. QUICK (Covent Garden), Mr. C. E. OSBORNE (Hereford), Mr. D. ROBERTS (Messrs. DICKSON'S, Chester), Mr. N. WALKER (Bedale), Mr. J. C. HOUSE (Westbury-on-Trym), Mr. W. J. ROBERTSON (Worcester), Mr. A. J. WOMMACOTT (Messrs. HEWITT'S, Solihull), and Mr. J. HARKNESS (Bedale). It was decided to hold the next meeting at Edinburgh on September 7, on the occasion of the Royal Caledonian Horticultural Society's autumn show.

PUBLICATIONS RECEIVED.—*The Science and Practice of Manuring*, by W. Dyke & J. Wright. (London: The Lockwood Press.) Price 1s.

NURSERY NOTES.

NOTES FROM FELTHAM.

I know of nothing more interesting than to spend a few hours at Messrs. James Veitch & Sons' Feltham nurseries, where house after house is filled with plants that will be seen on the exhibition table, or those that have already passed that stage, and are now being carefully looked after until their crops of seeds are gathered.

My last visit was made in the middle of August—perhaps not the best time to go—but even then there was much to see. Among the specialities, the different forms of *Streptocarpus* stood out prominently, one house being devoted to plants passing out of flower, but bearing a fine crop of seed pods. Another house was occupied with a made-up bed, in which thousands of seedlings were planted, and these were just commencing to produce their earliest flowers. Many of them were very beautiful, and great as is the number of present varieties of *Streptocarpus*, these seedlings show decided breaks away from those already in cultivation.

Begonias of the winter-flowering section, in which there are now such charming varieties raised by Mr. John Heal, were astonishingly

numerous, varying from tiny cuttings to established plants approaching the flowering stage. This section of Begonias is by no means the only one represented, as varieties of the tuberous-rooted class are grown in large numbers. Not the least interesting plants amongst the Begonias were some of the original species whence the garden varieties have been obtained. Crosses are still made between these species and the best of the newer garden forms, in the hope of getting further novelties possessing superior qualities. The strong-growing warm-house Begonias, such as President Carnot, are also largely grown at Feltham.

House after house and frame after frame were filled with Carnations ranging from recent layers to large, established plants in 6-inch pots.

Rhododendrons of the Javanese section are still grown at Chelsea, as they resist the London atmosphere better than the hairy-leaved *Edgeworthii* hybrids. These last are grown at Feltham, where there is also a vast number of *R. Veitchii*

(*Excelsior*) which was given an Award of Merit by the Royal Horticultural Society.

Abutilons were represented by a goodly number of flowering examples, but comparatively few varieties are grown. The best in their colours were *Boule de Neige* (white), *Golden Fleece* (yellow), *Rosæflorum* (rose), and *Red Gauntlet* (crimson). A distinct variety is *Triomphe*, sent out a few years ago by Mons. Lemoine, of Nancy. It has large, widely-opened flowers, which, though not double, have an increased number of petals. The flower-stems are short but stout, and the blossoms stand out in a partially horizontal manner, instead of being decidedly drooping, as in the ordinary forms. The colour is pink. From its stiffer habit, this variety is less pleasing, at least, to my mind, than most of the others.

Fuchsias are grown in three different ways—as dwarf bushes in 5-inch pots, as tall plants for clothing roofs or rafters, and lastly as standards. There was a good stock of the newer hybrid kinds raised in Germany, which have made con-

to the extent they were formerly, but still many of the best are kept in stock. The most pleasing feature in this class was a large batch of *Crowea latifolia* (syn. *saligna*), the Willow-like shoots being laden with charming, pink-coloured blossoms.

Bouvardias are cultivated in great numbers. The plants are grown in batches, and the earliest were just coming into bloom.

Many Liliiums, particularly *L. auratum*, *L. longiflorum*, and *L. speciosum* in its several varieties, are grown, and they are extremely useful for various decorative purposes.

The large number of flowering plants grown as standards caused me some surprise. The plants treated in this way included Fuchsias, Heliotropes, Pelargoniums, particularly the members of the Zonal and Ivy-leaved sections, and the scented-leaved variety *Clorinda*, *Plumbago capensis*, *Aloysia citriodora*, *Streptosolen Jamesonii*, *Salvia splendens*, Abutilons and others.

Considering that Lapagerias are not usually



FIG. 62.—FIRST PRIZE GROUP OF HARDY FLOWERS SHOWN BY MESSRS. GUNN AND SONS AT SHREWSBURY SHOW.

(See p. 150 ante.)

anum, the Moulmein species with magnificent, pure-white flowers.

Gloxinias filled three large houses. The occupants of two of them were ripening their seeds, but the third house, filled with this year's seedlings, was still a blaze of colour.

Hippeastrums are grown at Feltham in considerable numbers, although the general collection is still at Chelsea. The clearer atmosphere of Feltham enables the bulbs to be ripened off sooner than in London; consequently, they can be flowered earlier.

Kalanchoë flammea, which was first distributed by Messrs. Veitch 10 years ago, has flowered in successive batches since last May. Most of the plants were ripening seed, but late specimens were still affording a good display of blossom. Other species and hybrids of *Kalanchoë* are cultivated, and the propagator was busy at the moment with the new variety of *Kalanchoë kewensis*

considerable headway in this country within the last few years.

Cannas continue to be treated as a speciality. Mr. Weeks, who had charge of the soft-wooded plants at Chelsea for many years, and who now occupies the same position at Feltham, pointed out a variety which in his opinion is the very finest-flowering *Canna* in cultivation. This is *William Saunders*, the flowers of which are of an intense bright-crimson colour, and of more substance than is to be found in most of the *Cannas*. From this circumstance the flowers remain fresh for an unusual length of time. Other particularly good varieties noted were *Duc Ernest* (deep scarlet, bronzy leaves), *Gaekwar of Baroda* (yellow, heavily spotted crimson), *Venus* (deep rose, yellowish border), *King Humbert* (orange apricot), *Hesperides* (brilliant orange), and *Roseleur* (rosy carmine).

Hard-wooded greenhouse plants are not grown

planted in great quantities, and that, once planted, they may be regarded as permanent, it surprised me to see a house given up to layering them. Beside these, there was quite a large batch taken off from the stock plants last season, many of them being ready to shift into larger pots or to be planted into permanent quarters.

Other plants noticed at Feltham included those following:—*Amphicome Emodii*, an *Incarvillea*-like plant with rose and yellow-coloured flowers; *Aristolochia gigas Sturtevantii*, a well-known, large-flowered species; *Callicarpa purpurea*, whose profusion of flowers augured well for a good display of berries later on; *Calceolaria Clibranii*, then ripening its seed; *Dipladenia boliviensis*; *Erlangea tomentosa*, a good winter-flowering plant; *Jacobinia chrysostephana*, an old but much-neglected plant; *Lobelia tenuior*, one of the showiest of the *Lobelias*, both for baskets or pots; *Mussaenda erythrophylla*, an interesting

plant from the Congo district, with insignificant flowers, which are subtended by leaf-like, rosy-scarlet bracts; *Oxypetalum* (Tweedia) *coruleum*, a twining Asclepiad from South America with bell-shaped flowers of a peculiarly changeable shade of blue; *Solanum Wendlandii*, so well shown at the last Holland Park exhibition; *Thunbergia fragrans*, a beautiful, white-flowered climber; and *Tydaea Robert le Diable*, one of the deepest-coloured of all the *Tydaea*s.

Out-of-doors there was a good collection of *Dahlias*, planted out in order to prove their value for garden decoration.

A large expanse of ground is given up to the culture of annuals, and a splendid show they made, the quality of the flowers and the immensity from roques in the beds affording proof of the rigid selection exercised in the saving of the seed.

There were some acres of hardy fruit trees and thousands of trees in pots, but these cannot be noticed in detail at this time. *W. Trulove*.

THE FERNERY.

BRITISH FERNS OF THE FUTURE.

WHEN we compare the wonderful and beautiful varieties of British Ferns with those which were in existence half a century ago, the question naturally arises whether such advance can be continued on the same scale, or whether sooner or later the possibilities will be exhausted. At the time referred to, judging by the published catalogues of the period, really fine symmetrical and constant varieties were very few, and consisted mainly of wild finds, that is, finds which had only been propagated by offsets and not by spores, so that practically all the specimens extant of the particular type were identical. The rest of the varieties on the market consisted largely of irregular and defective types, which had resulted from injudicious sowing of erratic forms, a number of which, experience has shown, are far more apt to propagate themselves spontaneously than are the better types. This fact led to their introduction as early-raised market plants, whose value was then apparently determined by their curious character: the greater their eccentricity the higher the price. The number of these eventually so far exceeded that of the "thoroughbreds," that a revulsion of taste was inevitable, and, for decades, the popular idea of British Fern varieties, if any idea was formed at all during the period of depression, was that they were more ugly than beautiful, and hence unworthy of attention. Meanwhile, however, the handful of enthusiasts who, by their own discoveries and selective culture, had become acquainted with the finer varieties, were more and more encouraged by the results they had attained, and by degrees worked up collections of most beautiful, thoroughbred types, which in time eclipsed, in charm of plume dissection, or ornate tasselling, or frilling, anything which could be found among exotic varieties. Every now and again, too, altogether unexpected results occurred among the spore sowings, new strains coming to light in this way which surpassed their predecessors in delicacy and grace, and it also became clear that the possibilities of combining such charms by hybridising were fully demonstrated, both by systematic cross-fertilisation and chance results of mixed sowings. Now, in our opinion, it is this last phase of Fern culture which widens the horizon of future possibilities. So little comparatively has it been worked out that we may count the recognised crosses upon our fingers, and in this connection the example of *Polypodium Schneideri*, a successful cross between the two different species of *Polypodium*, *P. glaucum*, a large growing, tender exotic and *P. vulgare cornubiense* (elegantissimum), a beautifully-divided form of the hardy, common *Polypody*, indicates an immense field of utility in the direction of decorative plants. True, it may be argued that we cannot legitimately claim such results as British Ferns proper, but if it is our British Fern of an abnormal but beautiful type, which imparts its particular charm to a purely normal exotic, we are surely entitled to claim the major part of the merit involved, especially if the results be, as it is largely in *Polypodium Schneideri*, and might be entirely in less tender species, the production of nearly or quite

hardy plants possessing the charm both of the exotic form and that of the home variety. We recommend this field to the particular attention of exotic Fern growers, whose possession of warm greenhouses gives them special facilities for experiments, which can take the simple form of persistently sowing spores of fine British varieties with those of allied exotic species on the offchance of a cross. But, apart from such experiments, there are innumerable British varieties of one and the same species which would be greatly enhanced in beauty could the charm of another variety be added. We will take the common *Polypody* forms as a type. *P. v. cornubiense* has already been crossed with *P. v. bifido-multifidum* so as to obtain a crested *cornubiense*. *Cornubiense*, however, is an erratic Fern, and persistently transmits its erratic character to its offspring even, as we see in *P. Schneideri*, when crossed with another species. *P. v. pulcherrimum*, however, is a thoroughbred tripinnate form, and a successful cross between this and *P. v. cristatum* or *P. v. grandiceps* Fox or Forster could not fail to form a handsome combination unlike anything we possess. To revert to exotic blood there are, on the other hand, a number of simple fronded, exotic *Polypodiums*, which, if they could be induced by the gentle influence of *pulcherrimum* to bear tripinnate fronds instead of simple or pinnate ones, would be far more ornamental than they are at present. In another genus, the *Polystichums*, we have numerous exotic forms, some like *P. setosum*, perfectly hardy and very distinct from our native species, though viewed by some botanists as a form of *P. aculeatum*, which could be improved by crossing with some of the finely-crested *plumosums* or *cristatums*. As there is no doubt that many of the exotics are very closely allied indeed to our home species; the chances in this direction are very great. *P. setosum* is a fairly common market plant here, and we strongly advise, in connection with it, the procedure advocated above. In the *Spleenwort* family, too, a race, as a rule, peculiarly constant to the normal type, we have marked exceptions to this rule in the crested forms of our native *Asplenium trichomanes* and *Scolopendrium vulgare*. Fortunately for such experiments, difference in size forms no bar to crossing, and, in the initial stages, the growths vary little in their dimensions. Hence we have no such obstacles to crossing as are involved in the fine adaptations of size of pollen grains to length of style incidental to flowering plants. The main obstacles to the cross-breeding of Ferns consist, apart from wide generic differences, in differences in the rapidity in germination of the spores. A little study, however, may enable this to be overcome by sowing the spores at different times. In any case, the field of experiment is large, the difficulties to be overcome but trifling, whilst any results obtained must be valuable, since, even though crossing resulted in failure, the progeny of such good forms as should only be used, would have their commercial value. *Chas. T. Drury, V.M.H., F.L.S.*

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

SEEDS OF LILIUMS.—As long as my supply holds out, I shall be pleased to give a pinch of seed of any of the following species to any amateurs among your readers who may be interested in the culture of Lilies; I shall be glad to hear from anyone who has had *L. auratum* in cultivation in the open for more than 10 years:—*L. cordifolium* var. *Glehnii*, *L. dalmaticum*, *L. Hansonii*, *L. Henryi*, *L. Humboldtii magnificum*, *L. Kelloggii*, *L. Kramerii*, *L. Marhan*, *L. Martagon*, *L. Martagon album*, *L. parvum*, *L. parviflorum*, *L. pomponium*, *L. Parryi*, *L. pardalinum*, *L. philadelphicum*, *L. rubellum*, *L. Szovitzianum*, and *L. tenuifolium*. *A. Grove, Kentons, near Henley-on-Thames.*

QUEEN WASPS.—On p. 89 in the issue for July 16 Mr. W. Francis Eakin states "that the wasp pest is likely to be felt acutely this season as there were so many queens in the southern districts." Here, both in gardens and on the commons, queen wasps have been extremely numer-

ous, but I have noticed on several occasions that when there is a plague of queen wasps in the summer there is a scarcity of wasps in the autumn. Why this is so, I am unable to say. I am of the opinion that the weather and the gardener are not the only agents destructive to wasps. *G. H. H. Wassell, Heath End House Gardens, Baughurst, near Basingstoke.*

JUDGING AT LOCAL FLOWER SHOWS.—Two years ago I staged a collection of eight varieties of vegetables at a local flower show, in an open class, and was awarded the third prize. I considered I should have been placed first, but I was informed by one of the judges that my Leeks were out of season. I also exhibited at another show this year, when I was told the same thing. Surely it is to a gardener's credit to produce things out of season, when they are more appreciated by his employer. These shows were held in the middle of July, yet Leeks and Celery are seen at the Temple Flower Show six weeks earlier. *Kingston Hill.*

SAXIFRAGA FLORULENTA.—Those of us who have cultivated, or attempted to cultivate, *Saxifraga florulenta* will have read Mr. Farrer's illuminating notes on the plant (see p. 118) with the deepest interest. I gather from the note that Mr. Farrer has experienced the same difficulty as others in inducing it to flower. In cultivation, at least, the name of *florulenta* is an appropriate one. But I imagine that most of us have attempted to grow this species in a position in which the greater number of the silvery *Saxifragas* thrive, i.e., on the flat, or nearly so. From what Mr. Farrer says, a vertical position suits it best, and may, indeed, be necessary. The plants which survived longest with me were in almost complete shade, and on the stony slope of a rockery facing almost due east. Here they made good rosettes, but never developed a flower during their four or five years existence. The rosettes are so handsome as almost to reconcile one to their non-flowering, especially as the blooming would entail the death of the individual rosette and the necessity of saving and sowing the seeds if the stock is to be maintained. One includes it for convenience, among the "silvery" *Saxifragas*, but this term hardly suggests what Mr. Farrer so justly calls "the rich, glassy-green rosettes." *S. Arnott.*

SWEET PEAS AT SHREWSBURY.—I am the exhibitor referred to in your report of the Sweet Pea classes (see p. 150) as having Minnie Christie and Rosie Adams in mixture. . . My flowers that were said to be Rosie Adams were two-days-cut Minnie Christie, and upon reflection the similarity which these flowers would bear to Rosie Adams is not saying much for that variety. Those who will take the trouble to make the experiment by cutting flowers of this variety on two separate days and comparing them on the third day will quickly discover there is a great difference in shade. We had to cut as we did on account of the unfavourable weather. The only right and fair way to judge the difference between varieties so close together is to take their differences in form; we can always find a distinction here. *Geo. Aitkens, Wrexham.*

ARGEMONE GRANDIFLORA (see p. 138).—Having seen this Mexican cornfield weed growing and flowering freely in southern gardens, I, for several seasons attempted its cultivation as an annual in a northern urban garden, with, however, but indifferent success. The plants grew away vigorously, but failed to flower satisfactorily, probably by reason of the excessive rainfall and lack of bright sunshine. The plants, when at their best, were injured by early frosts, which sear but do not kill. It would appear to be essentially a plant for a warm, sunny situation, and under such circumstances, when massed, and flowering freely, with a dark background, would appear very effective. *Fred. W. Jeffery, Callander, N.B.*

DODDER.—I have observed an unusual quantity of Dodder (*Cucuta Epithimum*) this year in Hampshire and Dorset, and also in Co. Kerry, where it is a much scarcer plant than in England, and would be interested to know if any reader can suggest some reason for its great abundance, especially on Heath and Gorse; and if any other species, such as *C. trifolii*, has been noticed in special abundance this year? *H. S. Thompson.*

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

AUGUST 16.—*Present*: Mr. E. A. Bowles, M.A., F.L.S., F.E.S. (in the Chair); Messrs. J. Fraser, G. Gordon, J. Douglas, A. Rolfe, and F. J. Chittenden (hon. sec.).

Dimerous Iris.—Mr. W. FAWCETT, B.A., F.L.S., sent a flower of *Iris Xiphium* having all its parts in twos instead of threes. This type of variation from the normal in *Iris* is fairly common, but is often confined to one or two whorls instead of all four. The stem also bore a bud, but, in that, the parts of the flower were in threes.

Sporting in Carnations.—Mr. J. DOUGLAS, V.M.H., called attention to the variation in colour met with in *Carnation*, "*Rhoda*," which, when it was first sent out, was marked with lavender and red on a white ground. It had this year sported in two or three places to a lavender-ground flower. He remarked upon the frequency with which sudden colour sports appeared in more than one locality, in the same plant, at the same time. Several other instances were remarked upon by other members of the Committee.

Salices.—Mr. J. FRASER showed specimens of *Salix alba* (the *Bat Willow*) and called attention to the form of the serration of the leaves; though the latter vary in size, the serrations are always of similar form. He showed also *S. fragilis britannica*, which has irregular serrations to the leaves, and the hybrid, *S. viridis*, in which the foliage is intermediate between the other two. In the hybrid, the leaves are dark green above, and their under surfaces are whiter than those of *fragilis*; the serrations are intermediate in form and more regular than in *fragilis*.

Spotting of Calanthe foliage.—Plants of *Calanthe* vars. were shown badly attacked by a spot disease. So far as has yet been definitely ascertained, the spotting is not caused by a fungus or other organism, and appears not to be infectious. It seems rather to be due to some cultural defect, perhaps to spraying with cold water.

NATIONAL VEGETABLE.

TRIALS OF ONIONS AND POTATOS.

Seventy-two stocks were sent for trial as autumn-sown Onions by 19 distinct seedsmen, whose names were mentioned in the Cabbage Trial Report. The respective stocks of seeds were divided equally, and sent to the care of Mr. W. Poupart, Marsh Farm, Twickenham, and Mr. C. Foster, *The Times* Experimental Station, Sutton Green, Surrey, under numbers only. The seeds were sown in drills 12 inches apart on August 20, 1909, and, in each case, space was left for transplanting some of the bulbs of each stock. Owing to the mild autumn weather, the plants made an unduly rapid growth, which, in the spring, resulted in some of the plants "*bolting*." This was more marked, however, on the warm, sandy soil at Sutton Green, especially in those that were transplanted. The primary estimate of the merits of the various stocks was made from the Twickenham trial.

The final inspection of the Onions was made by a large committee on July 19, when the following awards were made:—

AWARDS OF THREE MARKS.

Messrs. James Carter & Co., *Record*; Messrs. Daniels Bros., *Golden Rocca*; Messrs. Dickson, Brown & Tait, *Excelsior*, *Giant Rocca*, and *Red Italian*; Messrs. Dickson & Robinson, *Premier* and *Giant Tripoli*; Messrs. Pearson & Sons, *Trebons* and *Red Italian Tripoli*; Messrs. Sutton & Sons, *A1*; Messrs. James Veitch & Sons, *Cranston's Excelsior*; Messrs. Webb & Sons, *Giant White Tripoli*; Messrs. Hurst & Sons, *Ailsa Craig*, *Red Italian Tripoli*, and *Giant Rocca*; Messrs. Vilmorin-Andrieux et Cie., *Vanguard* (very early white); and Messrs. Watkins & Simpson, *Wroxton Globe*.

AWARDS OF TWO MARKS.

Messrs. Daniels, *Allan's Reliance*; Messrs. Dickson & Robinson, *Flat Mammoth*; Messrs. Dickson (Belfast), *Wroxton Globe*; Messrs. Pearson, *Ailsa Craig* and *Giant Rocca*; Messrs. Sutton & Sons, *Perfection*; Messrs. James Veitch & Sons, *Giant Zittau*; Messrs. Vilmorin, *Short Pale*

Red; Messrs. Watkins & Simpson, *Cranston's Excelsior*; and Messrs. W. W. Johnson, *Giant Lemon Rocca*.

The following, while not so well bulbed, were regarded as excellent or true stocks; Messrs. Austin & McAslan, *Trebons* and *Excelsior*; Messrs. James Carter, *Tennis Ball* and *Early Wonder*; Messrs. Daniels, *Improved White Spanish*; Messrs. Yates (Evesham), *Giant White Tripoli*; Messrs. Watkins & Simpson, *Ailsa Craig*; Messrs. Vilmorin, *Blood Red*; Messrs. Hurst,

to be *Ailsa Craig*, *Cranston's Excelsior*, *Wroxton Globe*, *Record* and *Trebons*; and, of the *Italian* or *Tripoli* section, *Giant Rocca*, *Lemon* or *Golden Rocca*, and *Red* and *White Italian Tripoli* are the best.

TRIAL OF EARLY POTATOS.

This trial was conducted at *The Times* Experimental Station, Sutton Green, Surrey. The tubers were planted on April 20 in rows 30 inches apart, the sets being 18 inches apart in the rows. The soil is a deep sand, and was very moderately



FIG. 63.—GLADIOLUS GRAFIN DEGENFELD: COLOUR PRIMROSE-YELLOW WITH BRIGHT CRIMSON MARKINGS.

Award of Merit at the Royal Horticultural Society, August 16. (See p. 145.)

White Italian Tripoli; Messrs. Webb, *Giant Rocca*; Messrs. James Veitch, *Main Crop*; Messrs. Sutton, *Globe* and *Improved Reading*; Messrs. W. W. Johnson, *Globe*; Messrs. Dickson (Belfast), *Long Keeper*; Messrs. Dobbie, *Golden Globe*, *Giant Rocca*, *Trebons* and *White Tripoli*; and Messrs. Dickson & Robinson, *Paragon*.

It is thus seen that the best of the more globular and keeping Onions for autumn sowing seem

manured, the culture being that of the open field. The inspection by members of the committee took place on July 29, several roots at each end of the respective rows being lifted for examination. Generally, the crops were excellent and clean, but in few cases were the tubers large.

AWARDS OF THREE MARKS.

Messrs. R. Veitch & Sons, *Exeter*, *Lady*

Llewelyn; Messrs. Pennell, Lincoln, Sharpe's Victor; Messrs. C. Fidler & Sons, Reading, Sharpe's Victor; Mr. J. W. Cross, Wisbech, Sharpe's Victor; Messrs. C. Sharpe & Co., Sleaford, Sharpe's Express; Mr. J. F. Williamson, Mallow, Sharpe's Express; Messrs. R. Sydenham, Birmingham, Sharpe's Express; Messrs. Dobbie & Co., Edinburgh, Alpha; Mr. A. Dickson, Belfast, Mile-Cross Early; Mr. G. Sharpe, Perthshire, Cragie Early; Messrs. James Veitch & Sons, Chelsea, New English Beauty; Messrs. Webb & Sons, Wordsley, First Crop; Messrs. Sutton & Sons, Reading, May Queen; Mr. A. Dickson, Belfast, May Queen; Messrs. James Carter & Co., Holborn, Advance; Messrs. Dobbie & Co., Edinburgh, Midlothian Early; Messrs. Scarlett & Co., Edinburgh, Midlothian Early; Mr. J. F. Williamson, Mallow, Midlothian Early; Mr. Harris, Blackpill, Seedling White Kidney; and Messrs. Hogg & Robertson, Dublin, New Coloured Kidney (Hebron Type).

AWARDS OF TWO MARKS.

Messrs. Scarlett & Co., Edinburgh, Eclipse; Messrs. Hogg & Robertson, Dublin, Seedling No. 2 and Seedling No. 3, Yellow-fleshed Kidney.

Epicure (Messrs. Sutton & Sons, Reading) both from Scotch-grown and own-saved seed planted in the trial, gave in each case a superb crop of fine ware tubers.

New English Beauty, of the Ashleaf type, gave a remarkable crop of tubers, though not large.

First Crop and Lady Llewelyn very closely resembled each other from seed.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

JULY 21.—As usual at this time of the year, the exhibition was a small one.

W. R. LEE, Esq., Heywood (gr. Mr. Woodhouse), exhibited *Miltonia vexillaria* var. *Lambeauiana*, a fine large white form, one of the best varieties in cultivation. A First-class Certificate was awarded it. *Miltonia vexillaria* var. *Plumpton Glory*, also received a First-class Certificate. *Odontoglossum* × *ardentissimum* "Imperial Purple" was remarkable for the richness of its colouring.

Col. J. RUTHERFORD, Blackburn (gr. Mr. Lupton), staged a good group, in which some well-grown plants of *Cattleya Gaskelliana* alba were prominent; a Cultural Certificate was awarded for a specimen with 15 blooms. A new and very pretty plant in this group was *Odontoglossum* × *Rossiana* (O. *Rossii* × O. × *Adriane*). This plant and *Odontoda* × *Graireana* (*Cochlioda Noezliana* × *Odontoglossum Rossii*) were given Awards of Merit.

J. H. CRAVEN, Esq., Keighley (gr. Mr. Corney), exhibited *Miltonia* × *Bleuana* Beeche's var. and *M. vexillaria* var. *Lambeauiana*, which received an Award of Merit and First-class Certificate respectively.

Mr. J. BIRCHENALL, Alderley Edge, exhibited the new *Stanhopea Rodigasiana*, for which a First-class Certificate was awarded.

Mr. J. ROBSON, Altrincham, exhibited a good form of *Cattleya Warszewiczii*.

Messrs. SANDER & SONS, St. Albans, staged a group of plants, including several hybrids *Odontoglossums*.

Messrs. STUART LOW & Co., Messrs. KEELING & Sons, and Mr. W. SHACKLETON were other exhibitors.

The next meeting will be held on September 8. P. W.

SHINFIELD AND GRAZELEY GARDENERS.

The revival of the summer flower show, under the auspices of the above society, was amply justified. It was held in the grounds attached to the residence of Lieut.-Col. Caversham Simonds. In the vegetable classes, Mr. A. BRADFIELD and Mr. MILES secured the chief honours. There was a keen competition in the class for a decorated window-box, the 1st prize being awarded to Mr. C. GOODRIDGE. In the fruit classes Mr. O. C. BANBURY obtained chief honours. The success of the show was in a great measure due to the chairman of the society, the Rev. F. T. Lewarne, and the energetic secretary, Mr. Wilfred Kernutt.

WESTON-SUPER-MARE HORTICULTURAL.

AUGUST 9.—The Weston-super-Mare Horticultural Society held a show on this date in the Grove Park, after an interval of eight years.

The outstanding features included a beautiful group of miscellaneous plants staged by Messrs. JAS. CYPHER & SONS, Cheltenham; fruit and vegetables, and the exhibits in the decorative classes.

In the class for a collection of stove or greenhouse plants, Messrs. J. CYPHER & SONS were easily first.

The same firm also led in the class for a group of miscellaneous plants. Mr. WM. BROOKS, Whitecross Nursery, Weston, was 2nd in this class, staging some exceedingly fine plants.

In the class for a collection of Orchids, Messrs. J. CYPHER & SONS were again successful, followed by Mr. WM. BROOKS.

Zonal Pelargoniums were shown well. The 1st prize was awarded to Mr. WM. BROOKS, the 2nd to Mr. H. CORNELIUS, Weston.

Mr. B. C. SHEPHERD, Bridgwater, won the 1st prize for a collection of Begonias.

For foliage plants, Messrs. CYPHER won the 1st prize, followed by Sir WM. HOWELL DAVIES, M.P., and Mrs. BERNARD, Bridgwater.

The classes for Roses were contested keenly, some exceptionally good blooms being staged. The principal winners in this section were Mr. J. MATTOCK, Oxford, THE KING'S ACRE NURSERY Co., Hereford, and Mr. J. CROSSLING, Penarth.

Sweet Peas were also shown well. Mr. A. GERHOLD, Penarth, won the 1st prize in the premier class, being closely followed by Mr. J. E. A. GIBBS, Dinas Powis, Glamorganshire; 3rd, Mr. C. E. PIERSON, Burnham.

In the decorative classes, the best shower bouquets were shown by Messrs. HODGE & Co., Cardiff, who also exhibited the finest "bride's bouquet," and another bouquet made with Sweet Peas.

For a collection of fruit Mr. G. A. GIBBS, Tyntesfield, was a good 1st; and Mrs. J. R. BRAMBLE 2nd.

In the Grape classes Mr. GIBBS secured the 1st prize in every case. Sir W. HOWELL DAVIES and Mr. J. WEBBER, Minehead, each won two 2nd prizes for Grapes.

The 1st prize for a collection of vegetables was won by Mr. B. C. SHEPHERD, Bridgwater; 2nd, Mr. J. W. SPENCER, Worle.

Trade exhibits were few in number. Mr. H. ECKFORD, Wem, was awarded a Gold Medal for Sweet Peas; and a similar award was given to Mr. J. CROSSLING, Penarth, for a display of Roses.

Silver Medals were awarded THE KING'S ACRE NURSERY Co., Hereford, and Mr. J. MATTOCK, Oxford, for collections of Roses; Mr. C. J. ELLIS, Weston, for miscellaneous plants; Messrs. A. A. WALTERS & SON, Bath, for hardy flowers; and Messrs. JARMAN & Co., Chard, for cut flowers.

THE ROYAL ENGLISH ARBORICULTURAL.

IRELAND was this year selected by the society for its annual meeting and excursions, this being the first visit which the society has paid to the island. Dublin served as the headquarters for the greater part of the programme, and Waterford for the latter part of the visit.

On Monday the 15th, a visit was paid to Viscount Monck's estate at Charleville, which was reached by a drive from Bray through the beautiful Dargle Ravine. In the park and pleasure grounds at Charleville, great numbers of fine trees were noticed, particularly an avenue of *Cedrus Deodara*, planted in 1852, several specimens being about 75 feet high, also the Silver Firs, *Pinus insignis* and *P. excelsa*. *P. insignis*, sown in 1868 and planted out in 1872, are exceptionally fine, one tree measuring over 100 feet in height. There were also some fine examples of *Abies Webbiana*. In the gardens proper, is a Yew hedge about 9 feet high and the same distance through; one side of this hedge was draped with *Tropaeolum speciosum*.

Powerscourt adjoins Charleville, and here Lord Powerscourt, who displays considerable interest in forestry, personally welcomed the society, and, with the gardener, Mr. W. Owen, and the forester, Mr. J. Laird, conducted the party in the inspection of the estate.

The general meeting was held in the evening at the Evesham Hotel, under the presidency of

Mr. H. J. Elwes, in the regrettable absence of Sir Hugh Beevor, Bart., when the officers were elected, the president elect being Mr. E. R. Pratt, of Dowdham, Norfolk.

Tuesday's programme was again a very full one, and proved most interesting, a visit being made to the famous Vale of Avoca district.

Ballyarthur Woods, the property of Col. R. E. Bayly, were inspected, and measurements taken of the largest trees. Insect pests were searched for and their habits discussed.

Leaving this estate by the Woodenbridge Hotel, the members proceeded by way of Moore's immortalised "Meeting of the Waters" to the Avondale Forestry School and Station, maintained and managed by the Agricultural Department for Ireland. The party was conducted by the local secretary of the society, Mr. A. C. Forbes, through the nursery, museum, laboratories and experimental plots of this interesting pioneer establishment.

TAUNTON FLOWER SHOW.

AUGUST 11.—The 43rd annual show was held on this date. Although such an important exhibition, recent shows have not been successful financially, and hence the committee decided this year to revert to the practice of holding it on one day only. Owing to this fact, many traders who usually attend did not put in an appearance; but, fortunately, those who were present excelled themselves, and provided a splendid display.

As at other important shows this year, Messrs. J. CYPHER & SONS, Cheltenham, carried all before them in the plant group classes; they were also awarded the 1st prizes in the following classes:—For 12 stove and greenhouse plants in flower; for six stove and greenhouse plants in flower; for six foliage plants; for a collection of Orchids; for a collection of new foliage plants; for a collection of stove plants; and for a collection of greenhouse plants.

In the other open classes the principal awards were as follow:—Eight varieties of Begonias: 1st, Mrs. BERNARD, Bridgwater. Pelargoniums: 1st, The Hon. H. G. GORE-LANGTON, Hatch Beauchamp, in both classes.

In the cut-flower section, Roses were of splendid quality, and every class was keenly contested. In a class of 36 varieties, Messrs. PERKINS & SON, Coventry, were placed 1st, followed by THE KING'S ACRE NURSERY Co., Hereford.

Messrs. PERKINS also won the 1st prize for 18 varieties, beating Messrs. JARMAN & Co., THE KING'S ACRE NURSERY Co. being placed 3rd.

THE WEST OF ENGLAND ROSE FARM, Henlade, near Taunton, led for Tea Roses, THE KING'S ACRE NURSERY Co. being placed 2nd.

In the classes for Dahlias, Messrs. CRAY & SONS, Frome, practically swept the boards, winning four 1st prizes.

The Hon. H. G. GORE-LANGTON was placed 1st for a collection of cut stove and greenhouse flowers; 2nd, Col. E. C. A. SANDFORD, Wellington. The best double-flowered Begonias were shown by Rev. D. J. PRING, North Curry, and this exhibitor excelled for single Begonias.

The decorative classes proved a great attraction, chief interest being centred around the class for a dinner table decorated with fruit and flowers. All the competitors used Orchids, with greenhouse flowers and foliage. The 1st prize was awarded Mr. C. J. ELLIS, Weston-super-Mare, Somerset; 2nd, Sir WM. HOWELL DAVIES, M.P., Stoke Bishop, Bristol; 3rd, F. J. COLE, Bath.

In a similar class, limited to lady exhibitors, the 1st prize was won by the Misses HILL, Bridgwater.

It was a subject of comment that the Committee had appointed lady judges, and the awarding of the prizes did not give general satisfaction.

Sweet Peas were finely shown. The principal class was keenly contested, the 1st prize going to A. H. COWAN, Bishop's Hull. Mr. Henry Eckford's prize for Sweet Peas was won by Mr. FREEMAN ROPER, Chard; Messrs. R. Sydenham & Co.'s prize by Mrs. H. F. YOUNG, Bristol; and Messrs. Webb & Son's prize by the Right Hon. Earl of DEVON, Exeter.

The prizes for Asters were, in most cases, awarded to Mr. J. H. HARRIS, Taunton.

Mr. F. EAMES, Frome, showed the finest Gladioli, and Mr. C. WALL, Bath, the best border and Fancy Carnations.

In the class for tree or perpetual-flowering

Carnations, Messrs. YOUNG & Co., Cheltenham, were placed 1st.

In the open fruit classes, Major G. A. GIBBS, M.P., Flax Bourton, Gloucester, was a prominent prize-winner, his exhibits in nearly all cases being superb, and he won the prize, given by the Mayor of Taunton, for a collection of fruit.

The best Black Grapes, Hambro excluded, were shown by the Executors of the late Lady ASHDURTON. Major G. A. GIBBS showed the best White Muscats; and the Right Hon. Lord Justice FARWELL had the finest white Grapes other than Muscats.

The best Melon was shown by Major G. A. GIBBS, M.P.; the best Peaches by G. DAPPURN, Esq., Weston-super-Mare; the best Apricots by R. NEVILLE GRENVILLE, Esq., Glastonbury; and the best Nectarines by Lord Justice FARWELL.

R. BLACKMORE, Esq., Ilminster, staged the choicest dessert Pears and culinary Apples; and R. T. SOMMERVILLE, Esq., Creech, had the best dessert Apples.

VEGETABLES made a grand show, the quality all round being magnificent.

For a collection, Mr. B. C. SHEPHERD was awarded the 1st prize, followed by the Earl of DEVON.

In Messrs. Carter & Co.'s class for a collection Mr. SHEPHERD was again placed 1st. The 1st prize winners in other nurseryman's classes for a

Large Silver Medals were awarded to Messrs. R. VEITCH & SON, Exeter, for plants and cut blooms; and to Mr. HENRY ECKFORD, Wem, for Sweet Peas.

Small Silver Medals to Mr. F. ADAMS, Taunton, for floral designs; Messrs. RICH & Co., Bath, for herbaceous flowers; and THE KING'S ACRE NURSERY Co., Hereford, for Roses and other flowers.

Bronze Medals to Messrs. GODFREY & SONS, Exmouth; Mr. A. E. RICHARDS, Taunton; and Messrs. BARR & SONS, King Street, Covent Garden, London.

STIRLING AND DISTRICT HORTICULTURAL.

AUGUST 13.—The society's third and last excursion for the season took place on the above date, to Boquhan, the residence of Stephen Mitchell, Esq. The gardens are noted for the special culture of Sweet Peas, Dahlias, and vegetables, and these, with the glass structures, herbaceous borders, and pleasure grounds, attracted much attention. The beautifully-wild and romantic glen, which has been likened to the Trossachs, was also visited. The party numbered 70.

BRITISH GARDENERS' ASSOCIATION.

AUGUST 20.—On this date the members of the London branch were, by the courtesy of Sir Henry Tate, Bart., invited to inspect the gardens at Downside, Leatherhead. The party was conducted by the gardener, Mr. W. Mease, through the grounds, which are about 80 acres in extent, and situated on the side of a hill with a S.W. aspect. An Italian garden has been formed recently in front of the mansion, and this has added much to the beauty and interest of the grounds. The view from the terrace is very beautiful, the grounds merging almost imperceptibly with the surrounding country of wood and cornfield. After tea the glasshouses and fruit and kitchen gardens were visited.

Obituary.

H. A. TRACY.—It is with great regret that we record the death of Mr. Henry Amos Tracy, proprietor of the Orchid and Bulb Nursery, Amyand Park Road, Twickenham, where he had been established for many years. Mr. Tracy, who was 60 years of age, was one of the most popular men in the trade; he enjoyed excellent health until two or three years ago, when he had an attack which affected his eyesight and hearing. For a long time his condition caused anxiety to his friends, but he appeared to be recovering his former health and was present at the last meeting of the Orchid Committee of the Royal Horticultural Society, of which body he had been a member for some years past. On the evening of Thursday, August 18, at about 7 o'clock, while in his garden, he was stricken with paralysis. He never recovered consciousness, and passed away about 11 p.m. the same night. During the many years he had been in business, many rare and new plants passed through his hands, one of the most noteworthy being *Cymbidium Tracyanum*. He was one of the first to import and offer at low prices *Odontoglossum crispum* and other popular Orchids, *Lilium auratum* and other Japanese plants, placing them within the reach of amateurs of small means. He was a man whose word could always be relied upon, and his sudden end will be regretted by business friends not only in Great Britain but in Europe and the Colonies. The business will be carried on under the management of Mr. Sidney Flory, a nephew, who has been associated with the firm since a boy.

FREDERICK WILLIAM FLIGHT.—The death of Mr. F. W. Flight took place on Monday, August 15, in his 76th year. Mr. Flight had a long connection with horticulture, and was one of the founders (in 1883) of the Winchester Horticultural Society. He was chairman of the executive committee from the commencement until his death. In his charming garden at the Cornstiles, Twyford, Winchester, he cultivated Roses, Chrysanthemums, and Carnations largely,

and was a frequent exhibitor of these flowers at southern shows, where he met with much success. Mr. Flight raised several new Roses, including the dwarf Rambler, Mrs. F. W. Flight, and also several good Carnations. For 27 years, Mr. Flight exhibited Chrysanthemums, his favourites being those of the Incurved section. He exhibited Chrysanthemums largely at the Winchester shows, where he received many awards.

SIMEON MARSHALL.—The death of this well-known landscape gardener occurred on the 20th inst., at his residence, the Manor House, Brafferton. Mr. Marshall, who was 74 years of age, was a native of Yorkshire, his birthplace being Rastrick, in the Halifax district. In common with other boys of the working classes of his time, he received little schooling, except what he gained from night schools which he attended after his day's work. In the late 'fifties, he was engaged as gardener at Stockeld Park, Wetherby. Mr. Marshall left Stockeld Park in 1861, and entered the nursery of Messrs. James Backhouse & Son, York, as a temporary hand, until a suitable situation could be obtained; but the late Mr. James Backhouse, who was a shrewd business man, placed him on the permanent staff, first as manager of the glasshouses, and later in the landscape department. He was one of the first to take Orchids in flower to Messrs. Stevens' auction rooms



THE LATE H. A. TRACY.

collection were (Messrs. Sydenham, Ltd.), Mrs. SOUTHCOMBE; (Messrs. Sutton & Sons), Mrs. BERNARD; (Messrs. Ed. Webb & Sons), Mrs. BERNARD; and (Messrs. R. Veitch & Sons, Exeter), Mr. B. C. SHEPHERD.

Some choice produce was also seen in the amateur classes for vegetables.

NON-COMPETITIVE EXHIBITS.

Messrs. J. CARTER & Co., High Holborn, London, were awarded a Gold Medal for a collection of vegetables.

Messrs. J. KELWAY & SON, Langport, Somerset, staged an imposing array of choice Gladioli, which included new and up-to-date novelties. (Gold Medal.)

Small Gold Medals were awarded to Messrs. ISAAC HOUSE, Westbury-on-Trym, Bristol, for a collection of Sweet Peas; to THE WEST OF ENGLAND ROSE FARM, Henlade, near Taunton, for a choice collection of Roses; and to Mr. H. CLARKE, of Taunton.

Silver-gilt Medals were gained by Messrs. MASSEY, of Spalding, Lincolnshire, who staged a magnificent collection of Potatoes; Messrs. W. & E. T. COUSINS, Taunton, for a display of floral designs, well arranged, with a background of Campanula pyramidalis and white Hydrangeas; Messrs. JARMAN & Co., Chard, for cut blooms; Messrs. ROWLAND ADAMS, Bath, for Roses, &c.; and the ALPHA EXTINGUISHER, LTD., Ross, Hereford.



THE LATE SIMEON MARSHALL.

in London, and, on one occasion, had the misfortune to be seriously injured in a railway accident at Abbots Ripton. Several times he undertook journeys to America on behalf of his employers. Amongst the numerous places he laid out or developed were Hutton Hall, Gillingham; Thornbridge Hall, Bakewell; and Toulstone Lodge, Tadcaster. Some few years since, he severed his connection with Messrs. James Backhouse & Son, and commenced business on his own account as a consulting landscape gardener, and was engaged in several important undertakings at the time of his death. He was a kind-hearted man, full of sympathy for others. He was twice married, but had no family; his second wife survives him. The funeral took place at Acomb on Tuesday, August 16.

RICHARD BUCKLAND LOWE.—We regret to record the death, on August 14, at the age of 60 years, of Mr. Richard Buckland Lowe, head gardener to the Earl Brownlow, Ashridge Park. Mr. Lowe was for several years a member of the Floral Committee of the Royal Horticultural Society. He was head gardener at Belton from 1879 till 1882, when he removed to Ashridge. He filled the office of secretary of the Ashridge Estate flower show from the time of its inception in 1889. The funeral took place at Little Gaddesden on the 17th inst., the mourners including the Earl Brownlow and Humphrey Talbot, Esq. Mr. Lowe leaves a widow and three children.

JAMES McBEAN.—The death of this well known Orchid nurseryman took place on Sunday, August 21, at his home at Cooksbridge. Mr. McBean, who died peacefully whilst asleep, was head of the nursery and Orchid establishment of Messrs. J. & A. A. McBean, at Cooksbridge, near Lewes. Mr. McBean was born on October 22, 1840. He always pursued an active life, and many years ago founded the nursery business at Cooksbridge. When *Odontoglossum crispum* were becoming popular, he discerned the value of this flower for florists' purposes, and commenced to cultivate it on a moderate scale for the supply of cut blooms. His son, Mr. A. A. McBean, later took charge of that branch of the business, with such success that the culture of *Odontoglossum crispum* became a speciality of the firm, and many fine spotted varieties, which flowered at this establishment, brought world-wide fame to its owners. For some years, the late Mr. McBean suffered from heart trouble, and, on his son becoming a partner of the firm, he retired from the personal supervision of the nurseries, so far as the details of management were concerned. Of late years, the nursery has also engaged in the raising of *Odontoglossums* and other Orchids with great success, and in this work the late Mr. McBean took a special interest.

LAW NOTES.

CLAIMS FOR COMPENSATION: "SMALL HOLDINGS ACT."

The Board of Agriculture and Fisheries call attention to the provisions of the Small Holdings Act, 1910, which came into operation on the 3rd instant.

Section 1 of the Act is as follows:—

1.—(1) Where a council, or a landlord at the request of a council, terminates a tenancy of land by notice to quit, with a view to the use of the land or any part thereof by the council for the provision of small holdings, the tenant upon quitting shall be entitled to recover from the council compensation for the loss or expense directly attributable to the quitting which the tenant may unavoidably incur upon or in connection with the sale or removal of his household goods or his implements of husbandry, produce, or farm stock on or used in connection with the land:

Provided that no compensation under this section shall be payable—

(a) unless the tenant has given to the council a reasonable opportunity of making a valuation of such goods, implements, produce, and stock as aforesaid; or

(b) if the claim for compensation is not made within three months after the time at which the tenant quits.

In the event of any difference arising as to any matter under this section the difference shall, in default of agreement, be settled by arbitration.

(2) The Board of Agriculture and Fisheries shall, out of the Small Holdings Account, repay to a council any compensation paid by the council under an award or with the consent or approval of the Board, and also any expenses which, in the opinion of the Board, have been necessarily or reasonably incurred by the council in relation to any claim for compensation under this section.

(3) This section shall apply where a tenancy is terminated after the commencement of this Act, whether the notice to quit is given before or after such commencement.

In view of the fact that compensation paid under this section will be repaid to the Council out of the Small Holdings Account the Board desire to indicate the procedure that in their opinion should be followed in dealing with claims.

The Council should in all cases avail themselves of the opportunity which must be afforded by the tenant of making a valuation of the household goods, implements of husbandry, produce or farm stock proposed to be sold or removed, and for this purpose should make arrangements which will secure the prompt inspection of the goods, &c., by a valuer or other qualified person. The time for doing this before the sale or removal may be insufficient to enable the matter to be brought before the Council or their Committee, and an officer of the Council should therefore be authorised to make the necessary arrangements as occasions arise.

If the tenant has satisfied the condition set out

in paragraph (a) the actual claim will be in time if it is made within three calendar months after the time at which the tenant quits. The Board do not think it is essential that the claim should include all particulars or state the total amount claimed, but the Council should ask for this information, and in case of refusal they should warn the tenant that the refusal may affect the costs of any arbitration that may be necessary (see Small Holdings and Allotments Act, 1908, section 58 (1) and Agricultural Holdings Act, 1908, Second Schedule, paragraph 15).

If the Council on investigating the claim are satisfied that the amount claimed is reasonable, or if they propose to offer a sum in settlement, they should in the first instance inform the Board of their views and supply all information bearing on the question necessary to enable the Board to determine whether their consent should be given. If the Council think that the matter should go to arbitration, they should either try and agree with the tenant upon an arbitrator by submitting to him the names of two or more arbitrators to whose appointment they would assent, or they may at once apply to the Board to appoint an arbitrator.

Compensation under the Act is only payable where the tenancy is terminated by a notice to quit, and will, therefore, not be payable where the tenancy is terminated (a) by arrangement with the tenant or (b) by its acquisition or extinguishment under the procedure for compulsory



THE LATE JAMES McBEAN.

acquisition. In the latter case compensation is payable under the Lands Clauses Acts as modified by the Small Holdings and Allotments Act, 1908.

Section 2 of the Act is as follows:—

Where a tenancy has been terminated before the commencement of this Act, and the tenant proves to the satisfaction of the Board of Agriculture and Fisheries that he has incurred any loss or expense for which he would have been entitled to compensation under the foregoing section of this Act if the tenancy had terminated after the commencement of this Act, the Board may, out of the Small Holdings Account, pay to the tenant such compensation for such loss or expense as they think just: Provided that no compensation under this section shall be payable if the claim for compensation is not made before the first day of November nineteen hundred and ten.

The claim must be sent to the Board before the 1st November next, but the amount and detailed particulars of the claim may be submitted subsequently to the Board.

The Board are of opinion that in order to avoid any question in the future as to whether or not a notice to quit has been given by a landlord at the request of the Council, the officers of the Council should be instructed that no such request should be made except in writing and upon express instructions from the Council or the Small Holdings and Allotments Committee.

MARKETS.

COVENT GARDEN, August 24.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in one day.—Eds.]

Cut Flowers, &c.: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Alstroemeria, p. dz.	2 0-3 0	Lilium lancifolium	1 0-1 6
— bunches	2 0-3 0	— rubrum	1 0-1 6
Asters (Chinese),	2 0-3 0	— lancifolium	1 0-1 6
per dz. bunches	2 0-3 0	— album	1 0-1 6
Carnations, p. doz.	6 0-9 0	Lily of the Valley,	6 0-9 0
blooms, best	6 0-9 0	p. dz. bunches	6 0-9 0
American varieties	1 0-2 0	— extra quality	10 0-15 0
— smaller, per	9 0-—	Marguerites, p. dz.	1 6-2 6
doz. bunches	9 0-—	— bunches white	1 6-2 6
— Carola, special	2 0-2 6	— yellow	1 0-2 0
— second size	1 0-1 6	Mignonette, per	1 0-2 0
Catleyas, per doz.	12 0-15 0	dozen bunches	1 0-2 0
blooms	12 0-15 0	Odontoglossum	2 6-3 0
Centaurea cyanus,	0 9-1 0	crispum, per	2 6-3 0
per dz. bunches	0 9-1 0	dozen blooms	2 6-3 0
— suaveolens, per	3 0-4 0	Pelargonium,	3 0-4 0
dozen bunches	3 0-4 0	show, per doz.	3 0-4 0
Chrysanthemums,	6 0-9 0	— bunches	3 0-4 0
per dz. bunches	6 0-9 0	— Zonal, double	3 0-4 0
Coreopsis, p. doz.	1 6-—	scarlet	3 0-4 0
bunches	1 6-—	Poppies, Iceland,	1 0-2 0
Cornflowers, white	1 6-2 0	pr. dz. bunches	1 0-2 0
and pink	1 6-2 0	Roses, 12 blooms,	0 9-1 6
Dahlia, per dozen	3 0-4 0	— Niphetos	0 9-1 6
bunches	3 0-4 0	— Bridesmaid	0 9-1 6
Delphiniums, per	3 0-5 0	— C. Testout	0 9-1 6
dozen spikes	3 0-5 0	— Kaiserin A.	1 0-1 6
Gaillardia, p. doz.	1 6-2 0	— Victoria	1 0-1 6
bunches	1 6-2 0	— C. Mermet	1 0-1 6
Gardenias, pr. doz.	1 6-2 0	— Liberty	1 0-1 6
Gladioli, Colvillei	1 6-2 0	— Mme. Chateaub.	0 9-1 6
"The Bride,"	3 0-4 0	— Richmond	1 0-1 6
per dozen bunches	3 0-4 0	— The Bride	1 0-2 0
Cypripedium, p. doz.	4 0-5 0	— Various H.P.'s	0 6-1 0
— double	6 0-9 0	Scabious, per doz.	3 0-4 0
Lapageria, white,	1 6-2 0	bunches	3 0-4 0
per dozen	1 6-2 0	Statice, per doz.	4 0-6 0
Lilium auratum	1 6-2 6	bunches	4 0-6 0
— longiflorum	1 6-2 0	Stocks, per dozen	2 0-4 0
— longiflorum	1 6-2 0	bunches	2 0-4 0
		Sweet Peas, per	1 0-1 6
		dozen bunches	1 0-1 6
		Tuberose, p. gross	3 0-4 0
		— per doz. blooms	0 4-0 5

Cut Foliage, &c.: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Adiantum cuneatum, per dozen	4 0-6 0	Hardy foliage	3 0-5 0
— bunches	4 0-6 0	(various), per	3 0-5 0
Asparagus plumosus, long	3 0-6 0	dozen bunches	2 0-2 6
— medium, doz.	12 0-15 0	Ivy-leaves, bronze	1 0-1 6
— Sprengeri	6 0-9 0	— long trails per	1 0-1 6
Croton leaves, per	9 0-12 0	bundle	1 0-1 6
dozen bunches	9 0-12 0	— short green,	1 0-2 0
Ferns, per dozen	3 0-—	per dz. bunches	1 0-2 0
bunches (English)	3 0-—	Moss, per gross	4 0-5 0
— (French)	4 0-—	Myrtle, dz. bechs.	4 0-6 0
		(English),	4 0-6 0
		small-leaved	1 0-1 6
		— French	1 0-1 6
		— Smilax, per dozen	2 0-3 0
		— trails	2 0-3 0

Plants in Pots, &c.: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Aralia Sieboldii, p.	4 0-6 0	Ferns, choicer sorts	8 0-12 0
— dozen	4 0-6 0	— in 32's, per dz.	10 0-18 0
— larger specimens	9 0-12 0	Ficus elastica, per	8 0-—
— Moseri	6 0-8 0	dozen	8 0-—
— larger plants	12 0-18 0	— repens, per dz.	6 0-8 0
Araucaria excelsa,	12 0-30 0	Fuchsias, per dz.	4 0-6 0
— per dozen	12 0-30 0	Grevilleas, per dz.	3 0-5 0
— large plants,	3 6-5 0	Heliotrope, per dz.	3 0-4 0
each	3 6-5 0	Hydrangeas hor-	9 0-12 0
Aspidistra, p. dz.,	15 0-24 0	tensis, pr. doz.	9 0-12 0
— green	15 0-24 0	Isolepis, per dozen	3 0-4 0
— variegated	30 0-42 0	Kentia Belmore-	18 0-24 0
Asparagus plumosus	9 0-12 0	— ana, per dozen	18 0-24 0
— nanus, per	9 0-12 0	— Fosteriana, per	18 0-30 0
dozen	9 0-12 0	dozen	18 0-30 0
— Sprengeri	9 0-12 0	Kochia scoparia,	4 0-6 0
— tenuissimus	9 0-12 0	per dozen	4 0-6 0
Campanulas, per	5 0-6 0	Lantana borbonica,	15 0-21 0
dozen	5 0-6 0	per dozen	15 0-21 0
Chrysanthemums	4 0-6 0	Lilium longi-	12 0-15 0
from the open,	4 0-6 0	— florum, per dz.	12 0-15 0
— in pots	9 0-12 0	— lancifolium, per	9 0-10 0
Cocos Weddelliana,	18 0-30 0	dozen	9 0-10 0
per dozen	18 0-30 0	— martagon per	8 0-10 0
Crotons, per dozen	9 0-12 0	dozen	8 0-10 0
Cyperus alternifolius,	4 0-5 0	Marguerites, white,	3 0-5 0
per doz.	4 0-5 0	per dozen	3 0-5 0
— laxus, per doz.	4 0-5 0	— double yellow	4 0-6 0
Euonymus, per dz.,	3 0-8 0	Mignonette, per	4 0-6 0
— in pots	3 0-8 0	dozen	4 0-6 0
— from the ground	3 0-6 0	Pelargonium,	5 0-6 0
Ferns, in thumbs,	8 0-12 0	(show), per doz.	5 0-6 0
per 100	8 0-12 0	— Ivy leaved, per	4 0-6 0
— in small and	12 0-20 0	dozen	4 0-6 0
large 60's	12 0-20 0	— Zonal	3 0-4 0
— in 48's, per dz.	4 0-6 0	Selaginella, p. doz.	4 0-6 0
		Spiraea (pink)	9 0-12 0
		Verbenas, per doz.	4 0-6 0

Fruit: Average Wholesale Prices.

s.d. s.d.	s.d. s.d.
Apples (English):	Melons (French),
— Worcester, 3 6-4 6	Cantaloupe, each ... 2 0-5 0
— Derby, bushel 4 0-5 0	— (Spanish), yellow, per case, 24's ... 6 0-7 6
— Grosvenor, bushel ... 2 6-3 0	96's ... 9 0 10 6
— Quarrendens, 4 0-5 0	— Spanish Bronze (24's) ... 8 0 8 6
— Keswick Codlin 2 6-3 0	— extra large 10 0 —
— Gladstone 3 0-4 0	— Water 14 0-16 0
— Beauty of Bath 4 0-5 0	Nectarines, dozen:
— Ecklinville, p. bushel ... 3 0-4 0	— selected 4 0-8 0
Bananas, bunch:	— seconds 1 0-4 0
— Doubles ... 10 0 —	Nuts, Almonds, p.
— No. 1 ... 9 0 —	— bag ... 36 0-42 0
— Extra ... 10 0 —	— Brazils, new, per cwt. ... 48 0 —
— Giant ... 12 0-14 0	— sorted ... 55 0 —
— Red coloured ... 4 0-5 6	— Barcelona, per bag ... 32 0-34 0
— Red Doubles ... 8 0-9 0	— Cocoa nuts, 100 10 0-14 0
— Loose, p. doz. 0 6-1 0	— Walnuts, pickling, per bushel 7 0 —
Blackberries, peck 4 0 —	Oranges—
Figs, per dozen 2 6-6 0	— Cape seedless, per case ... 10 0 —
Grape Fruit, case:	— Naples ... 9 6-20 0
— 96's ... 20 0 —	— Jamaica ... 17 0-18 0
— 80's ...	Peaches (English), per doz. ... 6 0-8 0
— 64's ...	— seconds ... 2 0-4 0
— 48's ...	Pears (Californian), per case ... 9 0-9 6
Grapes (English), per lb.:	— (French), crate, 64's ... 7 6-9 0
— Alicante ... 0 10-1 0	— 72's ... 6 6-7 6
— Court ... 1 0-1 6	— 90's ... 5 6-6 0
— Muscats ... 1 3-2 6	— Paris/Williams' Bon Chretien, per case, 48's ... 2 6-3 0
— Canon Hall ... 2 6-4 0	Pineapples, each ... 2 0-5 0
— Hambro ... 0 6-1 0	— (Florida), per case, 30, 36 ... 16 6 20 0
— Colmar ... 1 3-1 6	Plums (English), bushel:
— Belgian Hambro 0 9-1 0	— Victoria ... 4 0-5 6
— Guernsey Alicante ... 0 6-0 8	— Washingtons ... 4 0 —
— Lisbon Sweet ... 9 0-11 0	— Princes ... 4 0 4 6
— water, per case ... 8 0-10 0	— Orleans ... 4 0-4 6
— clusters ...	— Diamonds ... 4 0-4 6
Greengages (Spanish & French), per box ... 1 2-1 6	— Pershore Fgg 28 lbs. to 30-3 6
— per 1/2 sieve ... 8 6 12 0	— (French), Royals, per 1/2 sieve ... 6 0-8 0
— (French), dessert, 1/2 bushel ... 7 6-8 6	— Blue ... 3 6-4 6
— cooking ... 5 0-6 6	— (Californian), per case ... 9 6-10 6
— per round ... 3 0-3 3	— Wickson, case ... 1 6-4 0
— (English), 1/2 bushel ... 6 0-6 6	Tangerines (Naarjes), per box ... 1 6-4 0
Lemons:	
— Messina (150) ... 6 0-6 6	
— Naples (420) ... 15 0 —	
— selected 20 0 —	
— Murcia (300) ... 10 6 —	
— large 12 0 —	
Melons (English) ... 1 6-3 0	
— (Guernsey) ... 1 0-2 6	

Vegetables: Average Wholesale Prices.

s.d. s.d.	s.d. s.d.
Artichokes (Globe), per dozen ... 1 6 2 0	Marrows, per tally ... 3 6-4 6
Aubergines, doz. ... 1 6-2 0	— per box ... 2 0-2 6
Beans, Broad (French), per pad ... 2 6-3 6	Mint, per dozen bunches ... 2 0 —
— per packet ... 0 4-0 6	Mushrooms, p. lb. ... 0 10-1 0
— Scarlet Runners, p. bushel 1 6 —	— broilers ... 0 9 —
Beetroot, bushel ... 1 6-2 6	Mustard and Cress, per dozen pun. ... 0 6-0 8
Cabbages, tally ... 2 0-3 0	Onions (spring), dz. bunches ... 2 0-3 0
Carrots (English), dozen bunches cwt. ... 0 9-1 3	— Dutch ... 3 6-3 9
— (French), per dozen bunches 4 0-5 0	— New Spanish, case ... 4 0-5 6
Cauliflowers, hamper (24-30) ... 4 0 —	Parsley, pr. doz. ... 2 0-3 0
— per doz. (large) 4 0 —	Peas (French), per pad ... 4 6-5 0
Celery, per dozen 2 0 —	— Kents, per bushel ... 3 6-4 6
Cucumbers, per flat ... 5 0 —	— bags ... 5 0-6 0
Endive, per dozen 1 3-2 0	Radishes (Eng.), p. doz. bunches ... 1 0-1 6
Herbs (sweet), packets, per gross 7 0 —	Stachys tuberosa, per lb. ... 0 4-0 5
Horseradish, foreign, new, per bundle ... 1 6-2 0	Tomatoes—
— 12 bundles ... 18 0-24 0	— (English), per dozen lbs. ... 3 0-3 6
Lettuce (English), per bushel ... 0 9-1 6	— small selected 3 0 —
— hamper ... 2 0-3 0	— seconds ... 1 0-1 6
— Cos, per dozen 1 0 —	— (Guernsey), per dozen lbs. ... 3 0 —
— (French), Cos, per dozen 1 6-2 0	— (French), crate 3 0-3 6
	Turnips, 12 bches. ... 2 0 —
	— (French) ... 4 0-5 0
	Watercress, p. dz. bunches ... 0 6-0 6 1/2

REMARKS.—There is a good supply of French Pears of good quality. Some good samples of Plums are also arriving from that country. English Peaches are plentiful, but Nectarines are scarce and in demand. Some very good samples of Gros Maroc Grapes are seen, but this not being a marketable Grape the demand is slow, and is, to 1s. 3d. per lb. is the market value of best samples. Navel seedless Oranges from the Cape, packed in boxes of 30, realised 10s. per case, this being the first shipment received for some time. The fruits were of fine quality. Both English and foreign Melons are plentiful. English Grapes are a fair example, and making good prices. English Apples are a fair supply. Tomatoes are firmer. Trade generally is quiet. *E. H. R., Covent Garden, August 24, 1910.*

New Potatoes.

per cwt.	per cwt.
Kents—	Bedfords—
British Queen ... 3 3-3 9	Epicure ... 2 6-2 9
Sharpe's Express ... 3 3-3 9	May Queen ... 2 6-3 0
Eclipse ... 3 0-3 3	Lincolns—
Epicure ... 2 6-3 0	Sharpe's Express ... 3 0-3 3
May Queen ... 3 0-3 3	Epicure ... 2 9-3 0
Bedfords—	Blacklands ... 2 3-2 6
Eclipse ... 2 9-3 0	

REMARKS.—Trade in best Potatoes is a little better than the last few weeks, but the demand for ordinary tubers is about the same. *Edward J. Newborn, Covent Garden and St. Pancras, August 24, 1910.*

COVENT GARDEN FLOWER MARKET.

At this season of the year prices are generally in favour of the buyers, supplies all round being in excess of demands. Roses are a leading feature and those of best quality with long stems usually make good prices. Yet there are large quantities which are sold very cheaply. It is remarkable that the varieties (with few exceptions) which are most appreciated during the winter, are also popular in summer. Sweet Peas are plentiful and, with showery weather, supplies will hold out later than usual. Those who grow for market should note which colours are most in demand. In going through Covent Garden I have frequently seen varieties which are useless for ordinary florist's work. Those of well-defined colours, such as white, pink, scarlet and purple, are generally the most saleable. The bluish shade may also be included. The cream or yellow varieties do not find much favour, as the colour is not deep enough. A good, clear yellow sort would be valuable. Aster blooms are good this season; the purple varieties, though not much used for ordinary decorations, are employed for wreaths, &c., at funerals. Lilies continue to be plentiful. Dahlias are prominent but they are not much in demand. These flowers are largely employed at harvest festivals.

POT PLANTS.

Many of the growers have finished for the season; their stands are empty, and trade is very uncertain. Already some good Chrysanthemums are seen; those which have been grown in borders and afterwards potted are not so valuable as those which have been grown in pots from the start. Hydrangeas are not quite finished. They are desirable plants, as they last for a long time in bloom. The pink variety of *Spiraea japonica*, grown from retarded crowns, is very good. *Campanula isophylla* (both white and blue), also *C. pyramidalis*, are now in their best condition. There are also good supplies of foliage plants, but trade in them is very dull. Palms are well supplied, and are offered at rather lower prices than earlier in the season. Ferns may also be purchased cheaply and much below their usual market values. *A. H., Covent Garden, August 24, 1910.*

THE WEATHER.

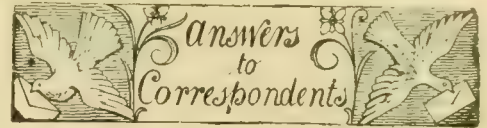
THE WEATHER IN WEST HERTS.

Week ending August 24.

Warm, wet and gloomy.—The days during the past week have been as a rule seasonable in temperature; while the nights, with one exception, proved warm. On the one cold night the exposed thermometer registered a reading within 6° of the freezing point; but on the other hand on two nights the same thermometer did not fall below 50°. Owing to the paucity of sunshine during the last few days the ground is still of only about seasonable warmth, both at 1 and 2 feet deep. Some rain fell on all but one day of the week, to the total depth of three-quarters of an inch. Of that amount more than half-an-inch was deposited during the early morning hours of the 19th. This fall re-started the percolation through the bare-soil gauge, about a gallon of rainwater passing through that gauge during the three following days, but it in no way affected the gauge on which short grass is growing. The sun shone on an average for five hours a day, or for three-quarters of an hour a day short of the usual duration at this period in August. The winds proved rather high at the beginning of the week, the mean velocity in the windiest hour being 18 miles—direction W. The average amount of moisture in the air at 3 o'clock in the afternoon exceeded a seasonable quantity for that hour by 7 per cent. *E. M., Berkhamstead, August 24, 1910.*

GARDENING APPOINTMENTS.

- Mr. H. J. CHOULS, as Gardener to Lord ABERDARE, Duffryn, Mountain Ash, Glamorgan.
- Mr. A. HOBBS, for 7 years Gardener to E. ROSS FAIRFAX, Esq., Macquarie, Tunbridge Wells, as Gardener to HAMILTON GORDON, Esq., Oakleigh, Tembury Road, Tunbridge Wells. (Thanks for your donation for the R.G.O.F. box.—Eds.)
- Mr. J. HEATH, for nearly 8 years as Gardener to T. G. BAKER, Esq., late of Waterdale, Wolverhampton, as Gardener to Major C. GOSSETT MAGALE, M.F.H., The Terrace, Oaken, near Wolverhampton. (Thanks for 1s. which has been placed in the R.G.O.F. box.—Eds.)
- Mr. J. FRENCH, for 4 years Gardener to the late Lady BATEMAN J. SCOTT, Great Barr Hall, Birmingham, as Gardener to ERNEST DE LA RUE, Esq., Lower Hare Park, Newmarket.
- Mr. HY. WELCH, for 16 years Gardener to Capt. TRYON, late of Rowdower House, Devizes, as Gardener to Col. TURNOR, Pinkney Park, Malmesbury.
- Mr. H. LAZELL, for the past 5 1/2 years Foreman in the Gardens at Beech Hurst, Haywards Heath, as Gardener to H. MANSFIELD KNIGHT, Esq., at the same address.
- Mr. E. G. WHITE, for the past 12 months Gardener to Col. VERNON, D.L., Clontarf Castle, as Gardener and Steward to Mrs. GEOGHEGAN, Bert House, Athy, Co. Kildare.
- Mr. ARCHIBALD JACK, late Gardener to Major F. J. RICHARDSON, at Court Hill, Dunboyne, Co. Meath, and for the past 18 months at Park Grange, Sevenoaks, as Gardener to JOHN C. E. BRIDGE, Esq., at Pevalot Court, Aylesbury, Bucks. (Thanks for 1s. for the R.G.O.F. box.—Eds.)
- Mr. WM. PARTRIDGE, Gardener at Cleaton Meadows, Sunderland, for upwards of 20 years, as Gardener to Sir WM. WORSLEY, Bart., Hovingham Hall, Yorkshire.
- Mr. G. BERKELEY, recently with King's Acre Nursery Co., Hereford, and previously Gardener at Aberlarny, Carmarthenshire, as Gardener to E. MALLINSON, Esq., Woodleigh, Bradford-on-Avon, Wilts.
- Mr. J. McLACHLAN, for the last 5 years Foreman in The Gardens, Stronvar, Balquhider, R.S.O., as Gardener to Sir JAMES LOW, Bart., Kilmarnock Castle, Cupar-Fife.



••• The Editors will be glad to receive, for consideration, large photographs of horticultural subjects, suitable for reproduction as Supplementary Illustrations in this Journal.

ADDRESSES: A. S. B. Fruit, Flower, and Vegetable Trades' Journal, 1, Mitre Court, Fleet Street, London, and Fruit Grower, Fruiterer, Florist and Market Gardener, 1, 2, and 3, Salisbury Court, Fleet Street, London.

BROCCOLI WITH "CLUBBED" ROOTS: T. H. C. The plants are badly attacked by the "slime-fungus" (*Plasmodiophora Brassicæ*), which causes this "club root" or "finger-and-toe" disease. The plants sent are full of the plasmodium and spores of this organism. Such seedlings are useless for transplanting, and should be destroyed by fire, not given to animals, as the spores return to the ground in the manure. Give the soil a good dressing of quick-lime, and do not grow any of the Cabbage family on it for a season or two. Destroy all weeds belonging to the Natural Order Crucifere, such as Shepherd's Purse, Wild Radish, and Wild Mustard.

CONSTRUCTING A PERGOLA: J. A. Thompson. The width of the pergola should depend to a great extent on its length. For a long one in a field such as you desire the width should be fully 12 feet, with the pillars 15 to 20 feet apart and 10 feet high. It would be advisable not to make the herbaceous border by the side too wide, as the tall plants necessary for the back row would tend to dwarf the pergola and shade the climbers. A width of 6 feet to 10 feet should suffice. A turf walk beneath the pergola would be pleasant in dry, but not in wet weather. It is best to employ gravel or flagstones. If flagstones are used, they need only form a path about 4 feet wide in the centre, and flowering plants could be grown along the sides. There is no reason why a pergola should not be as effective on a slight slope as on the level, but in that case it should not be made straight, except under certain circumstances.

CORRECTION.—Owing to a printer's error the height of *Aracaria imbricata* in Messrs. Pennick & Co.'s Dublin Nursery (see p. 143) was given as 500 feet instead of 50 feet. Messrs. Pennick inform us that the nursery has an area of 25 acres.

CULINARY PEAS: H. B. The Peas are attacked by four distinct insect pests, viz., the Pea thrip, which attacks the blossoms and pods; the Pea midge (*Diplosis pisi*), the maggots of which are present in the pods; the Pea moth (*Grapholitha pisana*), the larvæ of which live in the Peas; and the Pea leaf-miner (*Agromyza* sp.), which "mines" in the foliage. All the affected haulms should be burnt.

CYANIDING GLASSHOUSES: A. A. and Henri. This can be done by the use of either potassium cyanide or sodium cyanide, but it is preferable to use the latter. Hydrocyanic gas is liberated when sulphuric acid is poured on to the cyanide of soda. The operation requires extreme care, owing to the extremely poisonous nature of hydrocyanic acid. The chemical is placed in an earthenware vessel, and the acid arranged above it in a bottle or other glass receptacle, with a string attached leading outside the building, say, through the keyhole. This is to enable the operator to liberate the acid whilst outside. For delicate subjects such as those you mention and for vineries in full leaf 1 1/2 ounces of the cyanide, 3 1/2 ounces of sulphuric acid, and 10 1/2 fluid ounces of water may be used with safety. The work should be done in the evening, and not in the strong sunlight, the temperature in the house should not exceed 60°, and the plants and surroundings should be dry. The glasshouse should be kept closed during fumigation from three-quarters of an hour to an hour, and then the ventilators and doors should be opened from the outside, the operator taking care not to inhale the escaping fumes. It is best to do the work on a calm day. Close any crevices in the house through which the

fumes might escape. The horticultural sundriesmen supply outfits and material for the purpose, and a useful cyaniding machine can be obtained from Mr. F. C. Edwards, 12-15, Warehouse Hill, Leeds.

DIMENSIONS FOR A TENNIS COURT AND A CROQUET GROUND: *B. R. K.* A tennis court for the single game is 27 feet wide and 78 feet long; and for the double game 78 feet long and 36 feet wide. The posts for supporting the net should be placed 3 feet beyond the sides. The service lines run parallel to the

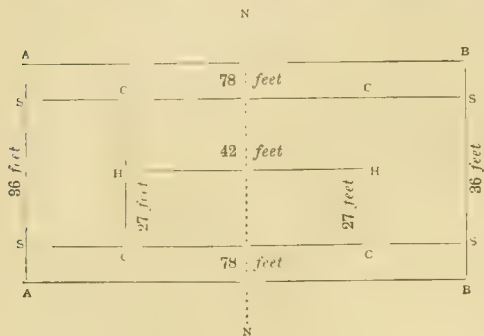


DIAGRAM OF A TENNIS COURT.

The lines A B and B A indicate a double court for three or four players; S S, S S, a single court for two players; A A and B B are the base lines; C C and C C, service lines; H H, half-court line; N N, net.

net, and are 21 feet distant from the same. The net should be 3 feet high in the centre, and 3 feet 6 inches at the posts, which are put 3 feet outside the line, to allow of the net dropping.

Croquet Ground.—In order to obtain uniformity in laying out a croquet ground the Croquet Association has drawn up the following regulations. The ground should be rectangular, 35 yards in length by 28 yards in width, with a defined boundary. A flag shall be placed at each corner, and corner spots, 3 feet from both boundaries, shall be accurately defined. Points on the boundary 3 feet from each corner flag shall be marked by white pegs, not exceeding three-quarters of an inch in diameter, and 3 inches above the ground. The baulk shall also be defined. The hoops shall stand 12 inches out of the ground, outside measurement, and be firmly fixed. The crown shall be straight and at right angles to the uprights, which shall be not less than 3½ inches or more than 4 inches apart (inside measurement) from the ground upwards. The turning and the winning pegs shall be of wood, of a uniform diameter above the ground of 1½ inches. They shall stand 18 inches out of the ground and be firmly fixed. Measurements:—Setting No. 1: Pegs in centre line of ground 7 yards from nearest boundary; hoops in centre line of ground 7 yards from peg and 7 yards apart; corner hoops 7 yards from nearer peg and 7 yards from the nearest boundaries. Setting No. 2: The winning peg equi distant from the corner; hoops in centre line of ground 7 yards from peg; corner hoops 7 yards from the nearest boundaries. In laying out a croquet ground it is essential to have sufficient room outside the lawn (35 yards by 28 yards) to allow of the roller or mower being turned. This is necessary to avoid unduly wearing the most important part of the turf, viz., that where the "yard line" is situated. You will find four different plans of a croquet ground, each in accordance with the rules of the Croquet Association, in the issue for May 22, 1909.

GLADIOLUS AND MONTBRETIA UNHEALTHY: *A. Robinson.* There is no evidence of any insect or fungus parasite in the roots, which are quite healthy. The leaves appear to have withered (possibly under unfavourable weather conditions) and then to have been attacked by various saprophytic fungi.

GRAPES DISEASED: *R. E. W.* There is no fungus which causes a disease to Grapes present on those sent. The only fungus on the Grapes is the common "mould" (*Penicillium*), which has obtained an entrance into the Grapes after they have been injured (and probably cracked). The unripe Grapes appear either to

have been injured through some wrong cultural treatment, or possibly defective nourishment.

HYDRANGEA WITH YELLOW LEAVES: *J. S.* There is no disease in the shoots sent. The yellowing of the foliage must be due to some wrong cultural conditions.

LARGE GOOSEBERRIES: *E. Wynn.* The variety London is one of the largest Gooseberries grown. In our "Record" book there is an entry for this variety with a weight of 37 dwts. 7 grains. It was grown by Mr. John Flower at Cheadle, in Staffordshire, in 1852. There are other entries for this variety of 35 dwts. 12 grains, shown by Mr. Gibson, Nottinghamshire, in August, 1844, and 31 dwts. 13 grains, shown by Mr. Saul, Garstang, 1842. Leader (25 dwts. 10 grains), Thumper (26 dwts.), Catherine (32 dwts. 2 grains), and Maccaroni (35 dwts. 6 grains) are other large kinds. Your berries were crushed in transit. With regard to your other question London City (light green), Antagonist (cream white), Beauty (red), Broom Girl (yellow), Eskender Bey (large red), Green London, Gunner (dark yellow), and Leveller (yellow) are a selection.

LEAVES DECAYING: *H. Hughes.* There are no signs of fungus or insect pests on the leaves sent. There is a deposit of a paint-like nature on the leaves, indicating that the plant has been sprayed with some fluid; but it is impossible to say whether this is causing the injury without knowing further particulars.

MELONS FOR MARKETING: *J. J. K.* The following varieties are suitable for market purposes: they are good growers, and their fruits which are handsome in appearance and of first-rate quality, set freely. Hero of Lockinge, a popular and handsome variety, with white lacing evenly laid on a rich golden ground; the flesh is pale in colour, almost white, rich and melting in flavour; the individual fruits average about 3 lbs. each. Earl's Favourite: This is a green-fleshed Melon, weighing from 3½ lbs. to 4½ lbs. each. The flesh is deep, pale green, melting, very juicy, and of rich flavour. Blenheim Orange is a very attractive, scarlet-fleshed Melon. It is a good grower and free setter, the fruits being heavily netted. The flesh is melting and uniformly thin-skinned. Other good varieties for market are Best of All, The Countess, and Scarlet Gem. A good, yellow loam, of heavy rather than light texture, best suits the requirements of Melons. If not sufficiently rich in plant-food, an 8-inch flower-potful of Peruvian guano, or some other approved fertiliser, should be added to every bushel and a half of loam. Mix the soil and manure well together, and place it in the form of hillocks, about 2 or 2½ feet apart, on the border or bench. Set the plants before they become pot bound at the roots, making the soil quite firm about the latter in planting, and afford water to settle the soil. Maintain a moist atmosphere until the plants are flowering, when the conditions should be drier, with a little ventilation if the weather permits. If the plants are to be trained to trellises fixed about 12 inches from the roof, they should be allowed to make a growth of 3 feet before being stopped. This will result in the production of fruit-bearing growths at the sides. The female flowers should be pollinated about mid-day. As soon as sufficient fruits have set for a crop, remove the superfluous ones, leaving those of a similar size evenly distributed over the plants. Pinch the shoots at two joints beyond the fruit. Five to six fruits, according to the vigour of each plant, may be left for a crop. As the roots push through the hillocks or mounds, they should be top-dressed with a layer about 2 inches deep of the same compost as they are planted in. Continue to make such additions, as required, until the intervening spaces are filled up nearly level with the top of the mounds. Keep the soil about the roots uniformly moist until the fruits begin to colour, when less moisture will be needed both at the roots and in the atmosphere. When the fruits are swelling, an occasional surface-dressing of artificial manure immediately before water is applied will be beneficial. During the summer and autumn months fresh air should be admitted to the house when 30° has been registered. When the houses are closed for the night, plenty of

clean, tepid water should be distributed over the plants and in the house, and the temperature may be allowed to reach 90° or 95°.

NAMES OF FRUITS: *James Kidd.* Apple Joanet-ing.—*J. W. B. Kerry Pippin.*—*J. Snell.* Duchess of Oldenburgh (syn. Peach Apple); Peach Dymond Goshawk, a hardy variety and a free setter.

NAMES OF PLANTS: *F. A. N.* 1, *Spiraea Menziesii*; 2, *Veronica longifolia*; 3, *Rudbeckia laciniata* fl. pl.; 4, *Sidalcea malvæflora*.—*A. J. H.* 1, *Spiraea filipendula*; 2, *Inula glandulosa*; 3, *Verbascum nigrum*; 4, *Veronica longifolia rosea*; 5, *Epilobium angustifolium* var. album; 6, *Bocconia cordata*; 7, *Eccremocarpus scaber*; 8, Send when in flower.—*Charles Prentis.* *Sedum rhodanthum.*—*W. H. M.* 1, *Cupressus Lawsoniana*; 2, *C. pisifera plumosa aurea*; 3, *Libocedrus decurrens*; 4, *Thuya plicata*; 5, *Cupressus nutkatensis*; 6, *Thuya orientalis*; 7, *Juniperus chinensis*; 8, *Ginkgo biloba*; 9, *Abies nobilis*; 10, *Chlorophytum elatum.*—*F. L.* 1, *Acer palmatum* var. dissectum; 2, *Photinia serrulata*; 3, *Cephalotaxus pedunculata*; 4, *Thuya orientalis*; 5, *Cephalotaxus Fortunei*; 6, *Æsculus parviflorus*; 7, *Abelia uniflora*; 8, *Physostegia virginiana alba.*—*H. C. Mitchell.* 1, *Erigeron speciosum*; 2, *Malva Alcea* var. *fastigiata*; 3, *Solidago canadensis*; 4, *Achillea Ptarmica* "Pearl"; 5, *Alstromeria aurea.* We do not undertake to name garden varieties of Phlox.—*M. C. T.* *Stokesia cyanea* var. *alba.*—*J. Channon.* 1 and 6, mossy Saxifrages cannot be named unless flowers are sent; 2, *Sedum spurium*; 3, *S. reflexum*; 4, *Saxifraga Hostii*; 5, *Sedum rupestre*; 7, *S. album* var. *brevifolium*; 8, *Saxifraga sponhemica*; 9, *Melissa officinalis variegata.*—*H. C.* *Sisyrinchium striatum.*—*Foreman.* 1, *Odontoglossum nevium*; 2, *Odontoglossum Lindleyanum*; 3, *Oncidium flexuosum*; 4, *Oncidium excavatum.* *L. B. W.* 1, *Hæmanthus albiflos*; 2, *Polypodium aureum*; 3, *Veronica intermedia*; 4, *Nepeta Glechoma variegata* (variegated Ground Ivy); 5, *Adiantum Capillus-Veneris.*—*A. B.* *Veratrum nigrum.*—*H. H.* 1, *Pteris tremula*; 2, *Adiantum cuneatum*; 3, *Pteris longifolia*; 4, *Gymnogramma chrysophylla*; 5, *Selaginella umbrosa*; 6, *Blechnum occidentale.*—*L. Chatham.* *Tradescantia virginica.*—*M. A. M.* 1, *Prunus pissardii*; 2, *Cichorium Intybus* (Chicory); 3, *Verbascum phlomoides*; 4, *Spiraea Douglasii.*—*W. Y.* *Hillingdon.* *Lapeyroussia* (*Anomatheca*) *cruenta*; *Begonia* next week.—*H. J. S.* *Prunella vulgaris.*—*G. E. B.* *Polygonum baldschuanicum.*—*J. H. S.* *Veratrum nigrum.*

NATIONAL SWEET PEA SOCIETY'S TRIALS: *H. C.* Write for particulars to the Secretary, Mr. Charles Curtis, 2, Adelaide Road, Brentford, Middlesex.

NECTARINES: *W. E.* The Nectarines are attacked by a fungus, possibly the Brown Rot fungus (*Sclerotinia fructigena*). The spawn (mycelium) of the fungus is apparent, at the first indication of "rot," at the point of the fruit. Remove all fruits as soon as they show signs of the disease and burn them. Cut out and burn any dead wood on the Nectarines or adjacent Peach trees. Do not allow any rotten fruits of Peaches, Apples, &c., to be near the Nectarines, as "Brown Rot" disease spreads from one kind of fruit to another.

PEACH FOR EXAMINATION: *W. L., York, and Rosacea.* The fruit was damaged in transit, and when it reached us was in a condition of pulp. Send other specimens, better packed, and enclose also some of the foliage.

VINE LEAVES: *Hollywood.* There is no disease on the vine leaves sent. A sudden change of colour in a few leaves on a vine takes place not infrequently in certain seasons, and does not indicate disease.

Communications Received.—*G. T., Leytonstone.*—*W. H. C.*—*T. A. H.*—*W. Y.*—*Uxbridge.*—*Constant Reader.*—*Golden's Green.*—*S. R.*—*W. E. R.*—*A. M.*—*Cullen.*—*Hampstead.*—*A. F. C.*—*E. M. M.*—*A. H.*—*Hants.*—*A. T.*—*J. G. P. C.*—*Anxious One.*—*C. D.*—*Canterbury.*—*Abocata.*—*J. W. R. T. G.*—*Scot.*—*H. C.*—*Dorking.*—*K.*—*Sons.*—*H. J. C.*—*E. W.*—*Sons.*—*G. W. W.*—*G. M.*—*W. K.*—*Aberdeen.*—*G. C. N.*—*Dun.*—*W. I.*—*O. S.*—*Subscriber.*—*J. L.*—*A. D.*—*S. B.*—*Bristol.*—*A. G.*—*J. C.*—*L. G.*—*P. Q. K.*—*P.*—*Co.*—*W. J. J.*—*G. M. T.*—*Midlothian.*—*A. C.*—*Sons.*—*Ltd.*—*M. M. K.*—*Z. B. Y.*—*S. R. P.*—*F. E. B.*—*W. H. C.*—*Lincoln's Inn.*—*S. G.*—*A. P.*—*R. P. B.*—*F. M.*—*Chloris.*—*J. D.*—*Insect.*—*J. L.*—*India.*—*S. A.*—*W. F. G.*—*F. J. H.*—*F. N. G.*—*Co., Ltd.*—*J. H. E.*—*H. S. T.*—*C. H. H.*—*J. M. A.*—*Stirling.*—*J. W.*—*Sons.*—*R. D. E.*—*R. H. P.*



THE

Gardeners' Chronicle

No. 1,236.—SATURDAY, September 3, 1910.

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THE COTTIAN ALPS.

THE Cottian Alps lie on the Western side of the great plain of Piedmont—a series of rather arid and undistinguished granite ridges, dominated unexpectedly by the tremendous cone of Mt. Viso, among the grandest of European mountains. The valleys, however, lie low; and, after the plateau of Mt. Cenis, it is somewhat disappointing to find oneself only at some 3,000 feet above the sea, and, therefore, with another 4,000 feet to climb before reaching the zone of interesting plants.

However from Bobbio (which in French has the pleasant name of "Bobbie") it is not long before one begins to notice characteristic species. The valley is full of vineyards, and the Chestnut climbs its slopes. Above these, the granite hills rise rugged, sere, and sunburnt, split deep by gaunt combes, which here have the same name in French; for French is the language of all these valleys of

the Vaudois: and these are the very "alpine mountains cold" on which so long lay unavenged the scattered bones of "the slaughtered saints." The bones, though, have long been picked up, and the slaughtered saints have ultimately triumphed, in so far as their descendants now peacefully possess the faith and the valleys for which their predecessors died. Nor are the Alpine mountains about here aptly to be described as "cold" in July. Indeed, the heat is fierce as one climbs above the Chestnut groves into the grim combes and chînes above Bobbio. First of all, the woolly-white trans-alpine form of *Sempervivum arachnoideum* is seen on the dark granite boulders here and there: and then, in shady hollows of every rock and wall, *Campanula Elatines* abounds. This curious, beautiful plant appears intensely saxatile, nor does the greyish down on its foliage leave one under any doubt as to its hatred of surface moisture. It lives in impenetrable crannies of wall and cliff, and though it seems to prefer a shady aspect, may often also be found in sunny places, if the precipice so hangs that the plant is not liable ever to be clogged by rain. In early July, the flowers were not open this year, but the inflorescences were developed, and it was interesting to see how closely they followed the line of the rock, almost like the boughs of the species of *Cotoneaster* often sold as *C. pyrenaica*.

On all the most sun-baked cliffs, *Lilium bulbiferum* was gorgeous. *Dianthus* made showers of pink, and in one corner I came on an outlying colony of *Androsace imbricata*. This had evidently seeded down from its main habitat, which ultimately I discovered—a stark and torrid precipice along whose minutest lines of cleavage this most impregnable of plants was growing in dense, ash-white cushions. Accustomed as one is to seeing this species as a high alpine, it was a surprise to me to find it, for the first time, at so low an altitude. Higher than these rocks, begins the zone of the special rarity to which the Cottian Alps have given a name. *Primula cotta* inhabits, apparently, tight crevices in the granite cliffs at some 5,000 feet. The flower had passed when I saw it, therefore, I can only record that it appears a species very tolerant of the sun, and completely saxatile in its requirements. Even in this, the only district which possesses it, *P. cotta* is painfully local in its distribution. I was told that I should see abundance of it on a neighbouring pass, and, when I got there, found to my horror, nothing but *P. marginata*.

That same pass is the sole Italian station for a plant which occurs only on these borders, here and there, at high altitudes, but several times on the French side of the frontier, to this once on the Italian. Elsewhere through all the mountain ranges of the world, it is vain to search for *Saxifraga valdensis*. Even if the search be extended to English gardens, a presumptuous little form of *S. cochlearis* minor will be pointed out, masquerading under an august name, but never the unrivalled *S. valdensis*. This brilliant plant inhabits rotten granite cliffs exposed to sunlight more pitiless than I have ever known courted by any other Silver Saxifrage. These cliffs are curtained and swathed with *Campanula Allionii*, which also grows at their feet: but one has eyes only for the Saxifrage, forming

dense, tight, hard balls of grey between the disintegrating slabs of the rock, and, in early July, just preparing its ruby-red, glandular flower-stems. Among all its kindred, *S. valdensis* stands out as distinct a species as it is a rare and lonely one. No form of *S. cochlearis* has any real resemblance to it, and Maw's classical quotation of *S. valdensis* as occurring with *S. lingulata* and *S. cochlearis* on the cliffs above Tenda, is almost certainly a slip of the pen, for *S. caesia* or *S. diapienioides*. But of this, more later, perhaps. As compared with the Silver Saxifrage of the Maritime Alps, *Saxifraga valdensis* is a high-alpine plant. It is restricted almost entirely to this one range of cliffs at about 7,500 feet. Higher than this, it does not seem to occur: and, though I found one plant in the valley far below, it was obviously a sad and sickly exile from its proper place.

Higher up, at the summit of the Pass, there is a station for *Gentiana Rostanii*. This, however, was under snow when I climbed the Col, and even *Campanula stenocodon* could only be defined by its leaves in the highest stone slopes. As one descends, *Primula marginata* and *P. graveolens* abound: dwarf and probably brilliant forms of *Dianthus neglectus* are preparing their buds amid the dwarf alpine turf. But it must be confessed that the Cottian Alps make no display compared with the gorgeous splendour of the Mt. Cenis. Perhaps the Mt. Cenis offers no fair standard of comparison: its richness, both of interest and display being so pre-eminent: but, anyhow, the purely granite Alps are, as a rule, I think, rather disappointing to a gardener. They enshrine, it is true, here and there, a first-class rarity, such as *Primula cotta* or *Saxifraga valdensis*, and, therefore, one has irresistible reasons for visiting them. But their general exhibition is apt to be monotonous and poor: even *Viola calcarata* was sparse above Bobbio. On the Mt. Cenis it almost hid the hills.

The local *Anemone* to my surprise, was *A. alpina*, but far inferior in glory to the bushes and bosquets of it that I had just been seeing in the Graians. On one high shoulder, however, *A. narcissiflora* shone in white snow-drifts from afar. Higher up *Saxifraga retusa* glowed incandescent among the brown, dank herbage, only just abandoned by the snow, and yet a little higher up began *Douglasia* (*Androsace*) *vitaliana*, though starved in aspect, after the comely clumps and cushions in which I had lately been revelling. But *Anemone vernalis* was as rare here as any jewel. In the Northern Alps, on such a place, it would have abounded. Over all this slope, I only succeeded in discovering one shabby little plant. On the other side of this high ridge, the hill fell away terrific, in copped cliffs and combes most awe-inspiring to descend. Here was a profusion of *Aquilegia alpina*, just preparing to flower, and the shaded crags were hung with *Primula graveolens* in glorious blossom. Next I discovered *Tulipa celsiana*, and in a little while, appeared the object of my expedition—that coveted rarity, *Fritillaria delphinensis*, growing in the steep grass-slope among Tulips and Narcissus *Anemone*. A dark, dainty and delicate beauty is sombre *Fritillaria delphinensis*, but I will be honest and confess that I did not find it so distinct in glory from *F. Meleagris* as to make it worth the 7,000 extra feet of climbing that its discovery entails. *Reginald Farrer.*

NEW OR NOTEWORTHY PLANTS.

PECTINARIA ASPERIFLORA.

THERE are probably very few plants in the world of which it can be said that they produce flowers that are unattractive, and at the same time beautiful. Such a statement would seem to be a contradiction of terms, yet it applies with perfect truth to the flowers of *Pectinaria asperiflora*, a rare member of the *Stapelia* group of *Asclepiads*. This plant consists of a cluster of globose, oblong or cylindric, leafless stems $\frac{1}{2}$ to $\frac{3}{4}$ inch thick, producing at their tips small, drooping and somewhat globose flowers rather less than $\frac{1}{4}$ inch in diameter. Besides being

small and pendulous, the lobes of the flower are close together and united at the tips, leaving only small fissures between them, so that the inside of the flower cannot be seen; outside, it is slightly rough and dull purplish in colour, quite unattractive, without any pretence to beauty. But if the lobes are separated and the flower carefully split open and laid out flat without pressure, the whole interior is seen to have a rough surface of frosted-white, beautifully dotted with crimson, very charming even to the naked eye. If, however, a flower thus flattened out is placed under a microscope of low power, especially a binocular one, and magnified 15 to 20 diameters, the extreme beauty of the inner surface thus seen is astonishing, nothing at all approaching it being known to the writer. The whole surface

is thickly covered with columnar processes, each of which is studded with other spreading, spike-like processes, forming a kind of miniature forest, all glistening, frosted-white, and spotted with crimson, forming the most exquisite piece of floral beauty. This is further enhanced by the very ornamental structure of the purple-brown corona. As before stated, it must be seen to realise how wonderfully beautiful it is. The question arises—What is the purpose of all this loveliness? Certainly, not to please mankind nor to attract insects, since it cannot be seen from the outside. Nor would it seem indispensable to the flower, since the other known species of the genus are without such complex structure. All the species are doubtless dependent for their fertilisation upon the entrance of minute insects



[Photograph by John Gregory.]

FIG. 67.—CATTLEYA RHODA "FAIRLAWN VARIETY."
(First-class Certificate at the R.H.S. meeting on Tuesday last.) (See p. 189.)

through the fissures between the lobes, but we can hardly credit that the interior has much interest for them, nor do I find that they feed upon it. Its significance is one of nature's unsolved problems.

Another species, *Pectinaria Pillansii*, seems only to develop its flowers underground, as all the mature or expanded flowers observed by Mr. N. S. Pillans, who discovered it, were developed under the soil, whilst the buds which formed above ground did not attain full size, nor did the lobes separate to form fissures for the entrance of insects as did those which were buried. This would seem to imply that it is fertilised by some minute insect that lives underground. This is, I believe, the only recorded case of a plant fully developing its flowers beneath the soil. There are several cases in which cleistogamous flowers, or flowers that have been fertilised in the air, push their seed vessel into the ground to develop. But that is not the same thing, since these flowers of *P. Pillansii* are quite normal, not cleistogamous, and are borne and expanded underground. The fruit is at present unknown. *N. E. Brown.*

NOTES ON LILIES.

LILIUM ODORUM.

WHETHER *L. odorum* (see fig. 68) is considered as a distinct species or a variety of *L. Brownii* there can be no doubt that it is a lovely plant and well worth taking a deal of trouble about. In the writer's experience, it is altogether easier to manage and keep than *L. Brownii*, coming into bloom year after year during the first week of August with unvarying regularity, and increasing steadily as the years go by.

True, *L. odorum* has not the delicate grace of *L. Brownii*, being altogether of a sturdier build, nor is the bloom so long in the trumpet, so beautifully proportioned, or so deeply coloured on the outside, but the plant has the advantage of quite commonly throwing up two or three stems, each of which often carries three flowers and occasionally four or five, whereas apparently *L. Brownii* can very seldom be coaxed into producing more than one or two stems with a solitary flower on each; the latter Lily, too, is not generous in the production of offsets, while *L. odorum* or *japonicum Colchesterense*—to give the plant the name by which it is known at Kew—is lavish, almost as much so indeed as *L. Henryi*, which is saying a great deal.

As the photograph shows, the leaves are shorter and a good deal broader than in the typical plant; they clothe the stem from head to foot, while in the case of *L. Brownii*, as with some other Oriental species, the lower part of the stem is bare of leaves, for reasons that are obvious, though why *L. odorum* should be different in this respect is not clear.

The plant seems to do better in a lime-free mixture of leaf-mould, coarse grit and charcoal than in more earthy soils, and, like most stem-rooting Lilies, benefits by the association of *Andromeda*s or some other dwarf-growing shrub the roots of which do not spread about and draw the moisture out of the ground as much as do those of other dwarf shrubs, for instance, some of the *Veronica*s or the *Daphne*s.

In the writer's experience, the bulbs may be planted quite 9 inches deep, and, if packed carefully with silver sand, they may be dug up as clean as a new-laid egg; bulbs imported from Japan, having had their roots prematurely shorn off in accordance with the detestable practice pursued by the bulb merchants of that country, do not usually survive after their first season, but, in dying, they can usually be relied upon to leave behind a number of offsets. These should be nursed for a year or two before being allowed to take care of themselves, and will generally flower in their third year.

Once started in the right way, the plant seems able to look after itself to better purpose than many of the Lilies hailing from the East, and soon grows a yard and more high.

So far as the writer is aware, the Lily does not commonly produce seed in this country, either in the open or under cover, but, as already mentioned, reproduction is provided for by the large crop of bulblets, so that the want of seed is immaterial; anyone growing Lilies must have noticed that in many species the absence of seed is counterbalanced by the production of offsets or bulbils, and, in illustration,

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables and Summaries, ante, pp. 77-82.)

(Concluded from page 159.)

9, IRELAND, N.

DUBLIN.—An unusual amount of hail which fell during the time the trees were in bloom, and the low night temperatures during May and early June, were the causes of a partial failure in some of the fruit crops. The few fruits which set are swelling well, and all trees are making unusually



FIG. 68.—*LILIUM ODORUM*, SYN. *JAPONICUM COLCHESTERENSE*: FLOWERS PALE YELLOW, OUTSIDE STREAKED WITH REDDISH-BROWN.

L. tigrinum, *L. Maximowiczii*, *L. Leichtlinii*, *L. Wallacei*, *L. Henryi*, and *L. sulphureum* may be mentioned. None of these Lilies seeds in the ordinary way in Britain, but all produce quantities of bulbils or else offsets. The flowers of *L. odorum* are exquisitely fragrant, reminding one of *L. Washingtonianum*, and last fairly well if the plant blooms in a shady place.

The specimen from which the photograph was taken was beginning to go off, and for that reason the blooms will be seen to be slightly shrivelled. *A. Grove.*

strong growth. *A. Campbell, St. Anne's Gardens, Clontarf, Co. Dublin.*

MAYO.—Late frosts injured the fruit blossoms, but it is a rather singular circumstance that in exposed positions there are Gooseberries, whilst in gardens sheltered by walls there is none. Perhaps this is because, in sheltered situations, the bushes were earlier in flower and the blossoms were damaged by the frost. *R. Savage, Belleek, Ballina.*

MEATH.—All bush fruits are exceptionally good. In sheltered orchards, we have a good crop of Apples, but in exposed fruit gardens the

trees were stripped of their fruits by a thunderstorm early in June. Late Strawberries were very satisfactory, and gave over an average crop. Gooseberry bushes in this district are becoming scarce, owing to the American mildew, but where the disease has not put in an appearance the crop is good. *J. B. Poir, Dunsany Castle Gardens.*

TYRONE.—The fruit crops are, on the whole, fairly satisfactory. Apples are above the average, both in quantity and quality. Pears are about half a crop. Cherries are very bad, but as they are not largely grown about here the loss is not serious. Strawberries rotted on the plants instead of ripening. We have not been troubled to any serious extent this season by insect or fungus pests. Aphids was much later than usual in putting in an appearance, but I note an invasion of black fly on the Cherries within the last week or two. American blight, which is occasionally very troublesome here, is not much in evidence up to the time of writing. The heavy rainfall and the latter half of June being hot caused a luxuriant growth on most trees, giving rise to fears, should the season continue damp and unfavourable, as to the proper maturation of the wood. *Fred. W. Walker, Sion House Gardens, Sion Mills.*

WEST MEATH.—Our fruit crops are deficient, which I attribute to badly-ripened wood and to the cold weather whilst the trees were in blossom. Of small fruits, Gooseberries, Raspberries and Black Currants are slightly over the average, but Red Currants are scarce. Strawberries were of good size, but the fruits lacked flavour, owing to the wet weather. Our soil, which is rather shallow in places, is inclined to be heavy and rests on a clay sub-soil. *Geo. Bogie, Pakenham Hall Gardens, Castlepollard.*

10, IRELAND, S.

ATHLONE.—The fruit crops in this district are remarkably good, especially small fruits, of which we have an abundance. But the wet weather did great damage to the Strawberry crop, and slugs have been especially numerous. I know of no remedy to cope with this pest, which is very troublesome to Strawberries. *J. Murray, Moydrum Castle Gardens, Athlone.*

CORK.—Apples, Strawberries, Raspberries, Currants and Plums are all good crops. Some Apple trees are slightly blighted, owing to the cold winds and frosts. The Codling moth has again made its appearance. *Maurice Colbert, Ahern, Cunn.*

KILDARE.—Although the weather was favourable when the fruit trees were in blossom, yet the fruits did not set well. Much of the bloom was very weak, owing, no doubt, to the unfavourable summer and autumn of 1909. Cherries dropped freely at the stoning period, and are the worst crop for many years past, especially Morellos. *Fredk. Bedford, Straffan House Gardens, Co. Kildare.*

WATERFORD.—The fruit crops generally in this part of Ireland are much under average, though Apples and Pears promise to be of good quality. The trees blossomed most profusely. Small fruits, with the exception of Gooseberries, are average crops. Plums on walls are a good average crop, but on orchard trees they are scarce. Our soil is of a heavy, retentive nature and of poor quality. *D. Crombie, Curraghmore Gardens, Co. Waterford.*

CHANNEL ISLANDS.

GUERNSEY.—All fruit trees blossomed freely, but the flowering was earlier than usual. This may in part account for a scarcity of fruits, for seldom have the crops been as light as this year. Apples generally are deficient in numbers. Pear trees on south walls have a moderate number of fruits; trees growing under other conditions are poorly fruited. Stone fruits are universally deficient. Strawberries produced a good display of bloom, and the berries set satisfactorily, but many were spoiled by the cold, wet weather. *Chas. Smith & Son, Caledonia Nursery, Guernsey.*

JERSEY.—The fruit crops generally are very bad. The trees flowered well, and many fruits set, but they were almost all destroyed by cold winds. Many trees of Peach, Cherry, Apple and Pear were almost killed by the cold winds. The Strawberries were a splendid crop, but many berries were spoiled by the constant rains. Small fruits are very fair crops. *T. Sharman, The Imperial Nursery, St. Helier's, Jersey.*

A JOURNEY TO JAPAN.

(Continued from page 153.)

CEYLON, THE RUBY ISLAND.

I REACHED Colombo on March 18. Here I purchased Willis's *Handbook of Ceylon* and a toopee (a Pith hat, made of the very light wood of the Pith tree) to protect myself from the strong rays of the sun. Dr. Willis, who is the Director of the Royal Botanic Garden, Peradeniya, has written a most useful book about this highly-interesting country, dealing with the people and their customs, the plant life of the island, its products, and, in fact, most things pertaining to Ceylon. Dr. Willis is not only Director of the Peradeniya Garden, but also of the other gardens of the country, besides being the Government botanist.

The season was the driest of the year; the south-west monsoon had not yet set in, the grass was burnt by the sun, the empty Rice fields were dry, and the ground was cracked, waiting for rain, before being ploughed again, with superstitious observances and the most primitive means. The Rain Tree (*Pithecolobium Saman*)

largely imported from China, as Ceylon does not produce a quantity sufficient to supply local needs, the east of the island being too dry for this crop and the centre and south very mountainous. The number of labourers imported from South India for plantation work is enormous, and these consume vast quantities of this cereal.

The official *Guide* of the Royal Botanic Garden, Peradeniya, by Mr. H. F. Macmillan, is a most valuable work, containing many useful notes and excellent illustrations; but, although it should be read by all visitors, its price is rather high. This garden is often referred to by people visiting it as "The Paradise." It is the Paradise of the wealthy. The visitor from Europe feels quite at home amongst the wonderful Palms, the shady, flowering trees and shrubs, and vast meadows. It may be described as a very large edition of Kew Gardens and the Palmengarten at Frankfurt-on-Main, excepting that glass roofs are not necessary here, where it is warm and moist, even more so than in hothouses at home. The gardens are well kept. Nearly all the flowering and foliage plants of our conservatories and glass-houses do well here, some being cultivated in the shade, and others in the full sunshine. Ferns



FIG. 69.—PITHECOLOBIMUM SAMAN, THE RAIN TREE.

(see fig. 69), was just flowering at Colombo, Erythras were opening their first blossoms, Bougainvilleas were at their brightest, and Hibiscuses blooming in all colours everywhere.

Having decided to stay in the low country on my return, I went up to Peradeniya the next morning after landing, secured lodgings at the rest-house there, and commenced studying the plants in this most beautiful botanic garden.

Director Willis, Mr. Macmillan, the able curator, and others of the staff received me most cordially, allowing me the use of the herbarium, library, and laboratory, besides an inspection of the wonderful collection of living plants. I was all the more grateful to them for, their various duties being extensive, the time they gave me was at no little cost to themselves. The work done by those engaged in Government service in the garden embraces a larger field than their actual apparent duties. Everything that affects horticulture, botany, and agriculture is carefully looked after. Coconut Palms, the Tea and Cocoa plants, and the Para Rubber tree are cultivated on an extensive scale, besides Rice and Plantains (Bananas), and the different fruits and vegetables on which the natives live. Rice is

and Selaginellas, Maranthas, Dracenas, Crotons, Acalyphas, with all their garden varieties, and beautiful Caladiums were noticed. Gardenias, Tabernaemontanas, Jasminums, and the many flowering trees, as well as the scent of the various fruits, fill the air with a delicious perfume.

Palms and Bamboos grow luxuriantly; the latter cannot be surpassed anywhere. *Amherstia nobilis* is an ever-flowering tree of great beauty, the large, red flowers being borne on long racemes all the year round. *Poinciana regia* is pushing out a scarlet mass of flowers over its light-green leaves. The Cannonball Tree (*Lecythis* sp.) (see fig. 70) has its stems covered with thousands of large and strange-looking flowers, and hung amongst them are fruits looking like big, round, heavy cannonballs of olden times. But looking more dangerous still is the Jack tree (*Artocarpus integrifolia*), the stems of which are covered with larger and heavier, green fruits, as well as on the stronger branches over one's head. But these are only some of the most prominent subjects. There are hundreds and more of not less interesting plants in flower and fruit. Nearly 150 acres are planted with interesting, valuable, and useful plants,

including tropical trees and Palms of all kinds. Animal, bird, insect, and reptile life abounds, all of harmless nature. The great Sand river which surrounds the garden on three sides affords wonderful views over its banks, the near hills being covered partly with plantations of Tea, Coconut Palms, and Para Rubber.

The trees in the gardens of the natives are largely planted as a shelter for their poor huts; their gardens are thickly covered, chiefly with

stem is straight like an arrow, just covered with a fine bunch of sappy-looking leaves, with bundles of flowers and fruits at the top. The stem of the Coconut Palm, unlike this plant, which always has a straight trunk, curves naturally.

The great Talipot Palm flowers only after 40 to 90 years, when it develops an enormous mass of small flowers about 40 feet high, the flower-spike being the largest of any plant

observed that these are everywhere. In the fine and large flower-garden are *Chrysalidocarpus lutescens*, better known under the name of *Areca lutescens*, in a most luxuriant state; *Cytostachys Renda*, the sealing-wax Palm (of which there are large quantities of seedlings), is most conspicuous with its coral red leaf-stalks. This Palm is very rare in Europe; but it grows well in the Nymphaea house at Kew. The various species of *Calamus* abound near the trees, climbing to great heights. The Toddy Palm is largely met with in the gardens of the natives.

Creepers, Lianes, and epiphytic Ferns abound on most trees, *Philodendron*, *Monstera*, *Rhaphidophora*, and *Pothos* being the most conspicuous. Orchids are also grown out of doors, but succulents are under shelter to protect them from the heavy rains. There are also native species of *Nepenthes*, and a small collection of water plants, including *Aponogeton monostachyon*.

The Peradeniya garden is not only of great beauty and interest to gardeners, but also of much value commercially. A great number of the chief economic plants grown in the island have been originally introduced by and sent out from this garden and its connections. It is laid out in the style of a luxuriant park, amid lovely surroundings. A long, straight, main road leads to the centre. There are other drives, leading to all parts, and paths traverse the wilder portion, known as the arboretum, which is planted naturally with magnificent trees. Jack-trees, with their heavy masses of fruit prevail; the timber is suitable for making furniture. Creepers and Ferns cover the trees, and a portion of the garden is left to follow Nature's own course. *Bambusas* line the stream and lake. The main drive and the flower-garden are planted with beautiful flowering and foliage plants. There are beds of *Caladiums* and *Canuas*, bordered with *Alternantheras*; there are also *Roses*, and pergolas with fine creepers spanning the roads. Conservatories, covered only with trellises and creepers, form shady and lofty houses for Orchids, Ferns, and tender foliage plants. Fine trees and Palms stand in vast meadows, and cattle graze in the wilder parts of the gardens. It is impossible to describe in a short report the manifold impressions to be gained, the richness of the garden, the various botanical and technical collections, the nurseries, trial ground, and experiment station, besides the Museum.

Fr. Henkel, Darmstadt.

(To be continued.)

THE ROSARY.

CULTURAL HINTS FOR SEPTEMBER.

THE first blooming of the Hybrid Perpetuals is now nearly over, but the Teas and Hybrid Teas are furnishing abundant blooms, which are this season of splendid colour and seem to improve as the weather becomes cooler. The flowers and buds are gaining in substance, and according to present appearance, the trees promise to flower well for another two months or even more. The flowering of other sections of *Roses* has been very fitful, owing to the changeable weather, but the growth generally is up to the average quality, all that is needed being warm, dry weather to ripen the shoots. Those who intend to purchase *Roses* in the autumn would do well to visit the nurseries at this season to make a selection. They will also be better able to compare the habit, vigour and freedom of flowering of the old with the newer varieties. For town gardens sorts should be specially selected that will withstand the smoky atmosphere. Some of the most suitable are the hybrids of the Bourbon and China *Roses*, such as *Coupe d'Hebe*, *Paul Ricaut*, and *Blairi No. 2*, also the Pink and Crested Moss, *Cabbage*, *Provence*, and the Japan or *Rugosa*. Among climbers that do fairly well in towns are *Dundee Rambler*, *Félicité Perpétue*, *Laure Davoust*, *Mme. d'Arblay*, and *Sweet Penzance Briar*. A few of the hardest Hybrid Perpetuals do well



FIG. 70.—THE CANNON-BALL TREE, *LECYTHIS* SP.

Coconut Palms, Jack trees, Bananas, Papaw, and along nearly all their hedges grows the straight-stemmed Areca-nut Palm (*Areca Catechu*). The Coconut and the very useful Palmyra Palm, which is grown largely in the north, are the most valuable Palms of the country. The Areca-nut Palm grows more like a weed, and is greatly prized by the natives, as its fruit supplies the bulk of the material of the universal "chew" of the eastern inhabitants. The

known. The tree dies soon after the seeds are ripe (see Supplementary Illustration, June 25). There is a large avenue of this Palm at Peradeniya, and another of the Palmyra Palm. There are avenues, too, of *Oreodoxa regia* and *O. oleacea*, the Cabbage Palms, as well as of the rare and peculiar, fan-shaped *Didymosperma distichum*, and some others of smaller size. Avenues are also planted with the best flowering trees. To finish my account of the Palms, it must be

for a time, but, as a rule, they need to be renewed every second or third year; these embrace John Hopper, Ann Alexiff, Duke of Edinburgh, Ulrich Brunner, General Jacqueminot, Senateur Vaisse and Louis Darzens (white). Standard Roses are very short-lived and cannot be recommended. The showery weather has caused the sap to be still active, especially in the De la Grifferie stock, which is a late grower. Advantage can be taken of this to insert early in the month buds of the following climbers which do well on this stock:—Noisettes: W. A. Richardson, Lamarque, Climbing Niphotos, Aimée Vibert; and T. and H. Teas: Cheshunt Hybrid, Belle Lyonnaise, Maria Henrietta, Reve d'Or, and Gloire de Dijon. Any buds that failed to grow on dwarf or standard stocks can still be made good by budding afresh. In standard Briars, insert the fresh bud as near to the dead bud or as close to the axil of the stock and shoot as possible, and in dwarfs, on the other side of the stock below the ground line. If the early buds on the standard Briars begin to start, shorten back the shoots some 6 inches or 8 inches from the bud; this will have the effect of hardening and maturing the growth. The dormant buds often make the best heads, as they break stronger and are unimpaired by an inclement spring.

Cuttings inserted now will root freely under a frame in a half-spent hot-bed or under French cloches plunged on benches in a cold house. Short, stubby, jointed shoots taken off with a heel are the best. Remove two or three of the bottom leaves and insert firmly in small, well-drained pots filled with sandy soil and leaf-mould, with a layer of pure sand on the top. Give a good watering and shade the cuttings from bright sunshine. If the condensed moisture is excessive, remove the cloches or frames for a few hours. These plants often prove hardier in constitution than those struck in strong bottom heat in early spring.

Keep the hoe well at work on the beds and borders to destroy the weeds and prevent the ground from becoming caked. All kinds of Roses, though much cleaner now, have suffered this season from insect pests, and should, for the next two months and after being housed, be watched for mildew, red spider, and aphids; there is no better or simpler preparation than black sulphur, soft soap, tobacco and quassia in solution. Use $\frac{1}{2}$ lb. quassia to 1 lb. of each of the others in 6 or 8 gallons of hot water according to the strength required; the preparation is perfectly harmless. The quassia chips can be strained and the extract added to the other ingredients. Spray well under and over the foliage at a temperature of 95° during the evening and wash the specific off early next morning with clean water.

The pot Roses of the Hybrid Tea, Tea and Noisette types propagated during autumn and spring will now be crowded with flower-buds and be invaluable for furnishing a supply of cut bloom during the autumn and winter months. This can best be effected by making a temporary frame for their protection over the beds, using lights placed a foot higher than the plants, with the sides and ends open; this will induce the buds to open cleaner and be of a better colour.

Finish repotting the spring-forced Roses of the Tea family that have been stood outside. The H.P.s can be dealt with later. The plants after potting can be stood outside again until they are re-established, housing them in October and November for winter and spring flowering. Any ill-placed or weakly growths in the centres of standard and dwarf Roses should be removed. During dull and showery weather suckers form freely, especially on Briar stocks; all these should be promptly removed. Owing to the rainy season, the budding, so far, has been exceptionally successful, and at present there are scarcely any failures. Early in the month, the buds of free-

growing decorative varieties may still be inserted on late-growing stocks, which at present are full of sap.

Planted-out Roses under glass, mostly of the Tea and China sections, since being lightly pruned back and well mulched after their first blooming, are now showing promise of a good autumn display of flowers. Keep the plants well syringed and free from insects while the bright weather lasts, giving all the ventilation possible both night and day. Keep the borders loosened with the fork and give an occasional dusting of slacked lime on the surface to keep down grubs and sweeten the soil. With the resources the Rose-grower now has at his command, it is possible, with good management, to have cut Roses practically the year round. J. D. G.

NOTICES OF BOOKS.

THE STORY OF MY OLD-WORLD GARDEN.*

THIS book deals with the laying-out and planting of a suburban garden of small area. The author shows how he succeeded in making a charming garden, filled with interesting plants of many species, for spring, summer and autumn effects. In the heart of London, and other great cities and towns, the garden may consist perhaps of only a few boxes or pots placed on a balcony, a roof or window-sill of a many-storied building. But even here, Pelargoniums, Marguerites, and Nasturtiums will open their beautiful blossoms, flourishing in surroundings apparently inimical to good development. In suburban London, away from the network of exchanges and offices, and where there are few, if any, deleterious factories, there are many thousands of small houses which have a greater advantage in possessing a little area at the back—some air space. Such plots have, as a rule, a boundary of brick wall or wooden palings. These are sometimes clothed with common Ivy or Virginian Creeper. Such smaller garden enclosures do not vary much in appearance; they are usually badly kept, and the walks run parallel with the walls or fences. Still further out, where 17th and 18th century houses once stood, are villas, detached and semi-detached, each with bits of garden measuring half-an-acre or less in extent. Beyond, even in the best of country gardens there is the same poverty of design, and lack of artistic ideas—a square grass plot straight walk of gravel, formal shaped flower-beds, and absurd tile edgings. If the picturesque style is attempted, and arches and standards are introduced, these are inevitably in iron, and usually galvanised, from which every kind of plant shrinks, while they cling lovingly to the bent boughs of a natural support.

An old-world garden would look far better, and can be planned and carried out with just a little more thought, time and trouble, and at smaller expense than the usual commonplace villa garden. A pleasant garden of the old fashion can be made in a single season. The secrets of its success are, firstly, the adoption of an original design, and, secondly, the employment of appropriate accessories. A small garden, say, of 55 feet by 45 feet, has its own distinct advantages; the owner of such a diminutive plot can construct it in the autumn of one year, and complete and enjoy it during the following summer, that is, if he does the light work himself, and has a knowledge of gardening.

With the object of making his new garden look like an ancient one, the author-owner sought in his locality, in the builders' yards, for old materials, and was fortunate enough to obtain that which he wanted at reasonable prices. These consisted of several tons of paving slabs, cobblestones, paving sets, brick-ends, tiles and broken flints once used in some old houses or chapels. With these and similar things he built low re-

taining walls, laid a rough sort of mosaic as a substitute for gravel for the walks; made a platform on which to set up an ancient sundial, and formed floorings in the arbours. How it was all done with the assistance of a jobbing gardener of the usual type, is related and illustrated in his delightful book. The figures, photographs, afford as much guidance as the text, and go far to prove what pleasing effects can be produced by unlikely materials, together with flowering plants, trees and shrubs, when imagination is freely thrown in as well.

PLANT NOTES.

GILIA CORONOPHOLIA.

WHEN seen from a little distance, plants of this half-hardy biennial have very much the appearance of a group of delicately-foliaged and unusually bright scarlet-flowered *Lobelia cardinalis*. Although generally recommended solely as a pot plant, it is an excellent subject for summer bedding where it can be given a well-drained soil, in a sunny position screened from rough winds. Seeds should be sown at the present time in well-drained pans or boxes of sandy soil, and be placed in a cool frame to germinate. As soon as the seedlings appear, they should be given abundance of light and air, otherwise losses occur through damping-off. Transplant the seedlings into boxes of soil similar to that in which they were raised, pressing the soil firm. As soon as the young plants are a couple of inches high, they should be potted singly into 3-inch pots. For this shift, a fair proportion of loam should be added to the soil, and thorough drainage is still essential. The plants should be wintered in a cool, airy house, where, even if they are not in flower, they will be highly ornamental, so beautiful is the finely-cut foliage. Throughout the winter, care must be exercised in watering, but at no time should the plants be allowed to become dry at the roots. When the season for bedding-out arrives, the plants, having been duly hardened, should be planted out in such a position as that previously denoted, taking care not to crowd them: a space of fully 15 inches from plant to plant being necessary. Scarlet is not a difficult colour to harmonise with other shades, and when the inflorescence is from 3 feet to 4 feet high, with plenty of foliage beneath, it becomes an easy matter to select another suitable subject for a groundwork. Except in very cold districts, these plants may be expected to commence to flower fairly early in July, and, as in the case of *Lobelia cardinalis*, side shoots prolong the flowering period after the main stem has completed its blooming. A. C. Bartlett.

ORCHID NOTES AND GLEANINGS.

THE LYTHAM HALL COLLECTION.

THE sale of the fine collection of Orchids formed by J. Talbot Clifton, Esq., is announced to take place at Messrs. Protheroe and Morris's Central Auction Rooms, 67 and 68, Cheapside, London, in two portions, the first portion on September 22 and 23, and the second part on September 29 and 30. The collection, which comprises about 6,500 plants in 2,500 varieties, is one of the most remarkable and varied in existence, many extremely rare and some unique plants being contained in it. There are also about 200 white *Cattleyas* and as many albinos of other species as could be procured, besides a fine selection of *Vandas*, *Aërides*, *Phalænopsis* and *Angraecums*. The best plants have secured many awards at the Royal Horticultural Society's and the North of England Orchid Society's meetings. Paintings of about 100 species and varieties by Miss M. Walters Anson will be on view at the sale.

* *The Story of My Old-World Garden in a London Suburb*, by G. Hillyard Swinstead, R.I., with 50 original designs and photographs by the author. Price 10s. 6d. Royal 4to. (London: Baines and Scarsbrook.)

MALVASTRUM.

This is a large and extensive genus, consisting of about 60 species, of which there are only five or six in cultivation. Most Malvastrums are natives of South America, although a few species are found in the Western United States. Malvastrum is closely allied to Sphæralcea, and some species have been placed by different authorities in both genera. Like most members of the Mallow family, the Malvastrums have very attractive, brilliantly-coloured flowers. The plants are not difficult to cultivate: they prefer rather dry and sunny positions, being liable in wet heavy soils to damp off in the winter. The following five species are in cultivation:—

M. campanulatum (see fig. 71).—This was first discovered in the Chilian Andes by Mr. McRae, in the year 1825. Plants first flowered in the garden of the Royal Horticultural Society in June, 1839. It was at that time treated as a greenhouse plant, but is quite hardy in sheltered, sunny positions. The stems are more or less procumbent, about 1 foot long, and bear deeply-lobed leaves, while the light-purple flowers, nearly 1 inch in diameter, are disposed in a loose terminal raceme. The plant shown in fig. 71 is growing in a sunny position; it commenced to flower in June, and kept up a succession till the end of August. *Malvastrum campanulatum* is figured in the *Botanical Magazine*, t. 3814, and its synonyms are *Malva campanulata* and *Malva purpurata*.

M. coccineum.—This is a dwarfier-growing plant, being not more than 6 inches to 12 inches high, producing silvery, canescent foliage, and leafy racemes of brick-red or scarlet flowers. The flowering period ranges from July to September. The species has been in cultivation since 1811, and is a native of Western North America, where it is found growing on plains and dry prairies. *Malvastrum coccineum* is figured in the *Botanical Magazine*, t. 1673, under the name of *Cristaria coccinea*.

M. Gilliesii.—This Chilian plant is of more or less procumbent habit, with branching stems and palmately-divided, hairy leaves. The bright-red flowers, which are 1 inch or more in diameter, are produced freely all through the summer. The plant is very liable to damp off in winter, for which reason it should be either well protected, or wintered in a frame in a pot. It is sometimes known as *Modiola geranioides*.

M. lateritium.—A rapidly-growing perennial, and one of the hardiest of the family. The plant is very useful for covering dry, sunny banks. The stems are quite prostrate, creeping along the ground, with an abundance of three to five-lobed leaves of large size. The brick-red flowers, each 1½ inches in diameter, are produced freely on long stalks, and show well above the leaves. The plant provides a good display during the whole of the summer. It is a native of Buenos Aires, and was introduced to gardens in 1840.

M. Munroanum.—In the *North American Flora*, Asa Gray places this species under *Sphæralcea*. It grows from 1 foot to 2 feet high, having procumbent, branching stems. The canescent leaves are variously lobed, while the attractive rose-red or scarlet flowers are produced in long, terminal racemes. This handsome species was discovered by Douglas on the dry plains of British Columbia, in 1826, and it was named by him in compliment to Mr. Munro, the superintendent of the Royal Horticultural Society's gardens at Chiswick. In common with all the foregoing species, it should be grown in sandy or gravelly soil, and will flower abundantly from June to October. In a rich soil it produces more leaves than flowers, and the leaves lose their fine, silky down. Propagation may be effected by seeds and cuttings. *Malva Munroanum* and *Sphæralcea Munroana* are synonyms. A figure of the plant in the *Botanical Magazine*, t. 3537, is given under the former name. W. I.

SPRINGFIELD PARK, UPPER CLAPTON.

It was about four years ago that the London County Council acquired the residence and the grounds attached thereto, known as Springfield Park, at Upper Clapton. The greater part of this residential-suburb is situated on a ridge, at a considerable elevation above the surrounding country. Springfield Park grounds, which form the termination of the ridge, overlook the wide marshland at the base, and afford spacious views in the direction of Walthamstow and Epping Forest, with Buckhurst Hill as the more prominent distant point in the prospect. From the grounds surrounding the mansion, the land slopes rapidly to the marshy meadows below it; and former owners had done much in the matter of tree and shrub planting to facilitate its conversion to a charming "open space" for the use of the inhabitants of this the most outlying suburb of North-east London. The land immediately at the bottom of the hilly ground was also taken over by the Council, but whether this formed part of the park originally, I did not ascertain on the occasion of a recent visit to the place. The land was too wet for the

vate ownership; the same remark holds good for many of the trees, which have suffered greatly in places from overcrowding.

Mr. G. T. Dodson, the present superintendent at Springfield, may be trusted to do what is required in these respects.

The floral decorations of the grounds are receiving close attention at his hands, flower-beds being found at all the salient points. The now old-fashioned ribbon border seems to be still one that meets with much favour from the visitors; next to these should be mentioned the mixed bed and the herbaceous border, with its bare spaces filled with ten-week Stocks, Zinnias, especially telling being the *Haageana* varieties; *Malope grandiflora*, *Coleuses* and *Antirrhinums*, chiefly those having crimson or other decided-coloured blooms.

A few nicely-designed carpet beds were noticed, but the season has not favoured some of the more tender plants employed.

I observed some pleasing combinations of *Violas* and other subjects, viz., the variety *Mrs. Chichester* with *Poa trivialis variegata*, and edgings formed by the variegated variety of *Veronica Andersonii*. This last-named is readily kept tidy



FIG. 71.—MALVASTRUM CAMPANULATUM: FLOWERS, LIGHT PURPLE.

purposes of a public park, and with the intention of raising the water level, so as to admit of it being utilised for cricket, lawn tennis, bowls, &c., 62,000 cartloads of earth have been deposited on it and levelled, so as to form a dry surface. It will be fit for playing games upon next year, the grasses with which it was sown having made good growth.

Among the arboreal features of the park, I noted grand specimens of the Turkey Oak, *Quercus Cerris*; the purple-leaved Beech, of which tree there are many perfect specimens; Sweet or Spanish Chestnut, Tulip trees, huge Thorns, Sweet Bays, of a size seldom observed; *Robinia Pseud-acacia*, many fruitful standard Apple and Pear trees, whose crop in 1909 amounted to 60 bushels; a few specimens of *Taxodium distichum*, *Cedrus atlantica*, *C. Libani*, and *C. deodara*. Clumps of the old, named varieties of *Rhododendron hybridum*, and *R. ponticum*; also Ghent Azaleas and *Azalea mollis*, which, in their season, fill the air with the fragrance of their blossoms. Many of the bushes of these last are 8 feet to 10 feet in height. Like those found in old pleasure grounds generally, they need more attention than has been afforded them under pri-

as an edging plant, and does not grow more than 9 inches in height in a season.

Fuchsias are utilised as pillar plants or in groups on the lawns, and with good effect in even this sunless, cool summer. The varieties included elegans, Charming, Mrs. Roberts, Western Beauty, Marinka, a variety with a crimson corolla and sepals, free in flowering; Arabella, like *Rose of Castile*, but a better flower, and Ballet Girl.

A long border of *Violas* was very bright, even when seen from afar. The plants were grown in blocks of one variety only. The following were among the finer colours:—William Neil, pale rose, distinct; *Duchess of Fife*, C. B. Riding, Blue King, Lady Dundonald, Bullion, and Lilacina.

The park possesses several entrances, near to which the best floral effects were massed. At one of these is an example of the ribbon border, consisting of *Pelargonium bicolor* and a Zonal variety, *Pentstemons*, and *Calceolaria floribunda*; opposite to this bed was another of bushes of *Fuchsia* in mixture, tall *Plumbago capensis*, *Campanula pyramidalis* in blue and white varieties, *Abutilon*

Thompsonii and other varieties, Francoa, Lobelia cardinalis and Fuchsia Meteor.

Another border was planted with Pentstemon Norma, a scarlet bloom having a white throat; P. Victoria, a very fine scarlet-flowered variety; P. Major Sexby, Helianthus, Dahlias, Sweet Peas of fine quality in the flowers, shrubby Phloxes, and Pentstemon Newbury Gem, a dwarf plant bearing scarlet flowers of a slender form.

A bed of H.P. Roses has done well this year, although the land hereabouts is too light for the Rose. It had an edging of Montbretias showing flower-spikes in plenty.

The park possesses a small lake of serpentine shape, but seeing that there is such a big expanse of water in the immediate foreground, it appears somewhat out of place. F. M.

The Week's Work.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Surrey.

Dendrobium.—Among *Dendrobiums* now in bloom, the rare *D. Hookerianum* (chrysotis) is the most conspicuous; its rich, golden-yellow flowers have a dark purple-blotched centre and fimbriated lip. This species is, in many respects, different from the majority of the others in the genus; the flowers are developed on spikes, which arise from the pseudo-bulbs whilst the growths and leaves are quite fresh and green, and the younger shoots still growing vigorously. The inflorescences appear on the growth formed during the previous summer. The plant is continually growing, for long before one growth is completed another has made considerable progress. For many years, this *Dendrobium* was, by many, considered to be far more difficult to manage than its congeners, but suspended to the roof of the Cattleya house, in an ordinary flower-pot, and given a shallow layer of Osmunda fibre to root into, it grows freely and satisfactorily. Another rare and distinct *Dendrobium* which is nearly always in bloom is *D. glomeratum*. This species and *D. subclausum* thrive best when suspended to the roof of a cool, intermediate house. All three species require to be kept fairly moist at the roots at all seasons. *D. superbum*, and its rare and lovely varieties *Burkii*, *Dearei*, and *Huttonii*, also such tall-growing species as *D. Dalhousieanum*, *D. fimbriatum*, *D. f. oculatum*, *D. clavatum*, *D. moschatum*, together with the hybrids *D. Dalhou-nobile*, *D. illustre*, *D. Arthur Ashworth*, and *D. porphyrogastrum* should, by this date, be accommodated in the hottest house, and have liberal treatment till their growth is finished. Such uncommon species as *D. capillipes*, *D. nodatum*, *D. gemellum*, *D. quadrilobum*, *D. macrostachyum*, *D. bursigerum*, *D. bicameratum*, *D. amethystoglossum*, *D. crumenatum*, and *D. cumulatum* also require plenty of heat and moisture when growing actively.

Miltonia vexillaria.—The present is the best time for repotting *Miltonia vexillaria*, because the new growths that are developing will soon commence to form roots, and, owing to the quantity of water needed whilst the plants are growing freely, the compost becomes partially exhausted. The plant loses naturally a number of its old roots every year; these may be cut off, and the plants supplied with fresh sweet compost. Previous to repotting, it is advisable to closely examine the growths for the presence of small, yellow thrips, which harbour low down in the young growths. If any are detected, dip the plants in some safe insecticide, rinsing them afterwards in clean, warm, soft water. *M. vexillaria* is a shallow-rooting plant, and forms numerous fibrous roots, which push their way just over and under the compost; for these reasons, a rather wide but shallow root run is beneficial to them. The receptacles should be filled with clean crocks to about three-quarters of their depth, and to render the drainage material secure, put a layer of Sphagnum-moss over it. The compost may consist of Osmunda fibre, Poly-podium fibre, and Sphagnum-moss in equal parts. Cut these materials into moderately-fine pieces, mixing them well together and adding plenty of small crocks. Keep the base of the plant on a

level with the rim of the pot, and carefully work the compost amongst the living roots, finishing with a layer of live moss. Rather light potting answers best; the materials should be compressed just sufficiently to make the plant firm, and water should be able to pass through the whole compost as through a sieve. For several weeks after repotting, great care must be taken in watering the plants. For a time, it will suffice to merely sprinkle the surface by means of the sprayer or a fine-rose watering can, the principal object being to induce the surface moss to grow. As the roots lengthen and growth becomes vigorous, the supply of water should be increased. If placed in the coolest part of the Cattleya house and properly attended to, the plants soon become re-established. Carefully shade the foliage from sunshine till the plants are well rooted in the new soil. The late-flowering varieties, as *M. v. rubella*, *M. v. superba*, *M. v. Leopoldii*, although their flowers are smaller than those of the type species, are well worthy of culture. This being their flowering season, they should be staged in the intermediate house, but when growth recommences, the same treatment as advised for *M. vexillaria* will suit them. The distinct hybrid *M. Bleuana* and its variety *nobilior* are now forming their new pseudo-bulbs, and copious root-waterings are necessary. Both varieties should be grown in the same house as the *M. vexillaria*.

Heating apparatus.—At this season, the hot-water appliances should be thoroughly overhauled and put into order for the winter season. Loose or cracked sockets in the hot-water pipes should be made good, valves and air taps loosened and oiled, and overflow and feed pipes put in good order. Replace the firebricks where necessary and clean out the flues around and over the boilers; the fire and ashpit doors should also receive attention. If it becomes necessary to empty the boilers and hot-water pipes, the plants in the houses should be kept on the dry side while such work is going on, and if any of the plants appear likely to suffer from dryness, only one-half the usual quantity of water should be afforded.

THE FLOWER GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Hertfordshire.

Propagating summer bedding plants.—This most important item in the routine of flower-garden management must be proceeded with without delay during the next week or so. In procuring the necessary cuttings, do not disfigure the plants more than is absolutely necessary. Pelargoniums are required in most places in the largest numbers, and cuttings of these may be removed at intervals. The growth of the plants this year is very soft, and doubtless more failures than usual will result. A capital plan is, after the cuttings are made, to lay them out thinly on a dry bottom in a sunny position, so that they may become wilted. The shoots should be inserted firmly in a good, open compost, containing plenty of road grit for preference. Some growers prefer to use pots and others boxes, but this is, I think, immaterial. Neither is a frame necessary to accommodate the cuttings, as I have seen excellent results obtained by standing the boxes on the garden walks, but, should wet weather set in, they should be protected by garden lights. Cuttings of the Ivy-leaved section may also be treated in the same manner as the Zonals. The Cape species of scented Geraniums that I recommended in an earlier Calendar for bedding purposes have made excellent growth, and if cuttings of these are taken and placed four or five together in a 5-inch pot, in a cold frame, they will soon root, if kept in a moderately close atmosphere. Cuttings of the various Fuchsias and Verbenas may also be treated in the same manner. For the propagation of the more tender subjects, such as Swainsonia, Salvia, Mesembryanthemum, Streptosolen, Plumbago capensis, and Heliotrop, I prefer to root them in a heated frame or pit, where the plants may be kept near to the glass or on shelves in a warm house. For general purposes, a 5-inch pot will be found a useful size. Therefore, a quantity of these may be prepared by having them well washed, dried and crocked. Prepare a compost of moderately fine soil. Fill the pots, making the soil firm, and on the top place a good sprinkling of silver sand. Make certain that the base of the cutting rests on a firm base and is solid in the pot, when a good

watering should be afforded by means of a fine rose. Many plants may be increased with rapidity in the spring; therefore, it is only necessary to keep a few stock plants of these through the winter. Plants that may be treated in this manner are Mesembryanthemum cordifolium variegatum, Iresine, Alternantheras in variety, Salvia, Ageratum and Verbena. Lantanas may also be similarly treated. It is an excellent plan to lift a few of these latter plants when the bedding is cleared. Pot them into 4½-inch pots, and stand them in a cool, shady position for a few days. Winter the plants in a warm frame or greenhouse, and, if they are introduced into a little heat in the New Year and kept well syringed, they will furnish a quantity of cuttings that will root readily in a warm pit. Plants of Lobelia may also be treated in the same manner, though a stock of this plant can be easily raised from seed. Cuttings of all plants require constant attention. See that the surroundings are kept sufficiently moist and do not neglect ventilation; remove at once any decaying growth. When they are rooted, place them in a cooler structure, and do all that is possible to promote a hardy growth. Endeavour to keep the flower-beds as gay as possible during the few remaining weeks of summer by constantly removing dead flowers and foliage, and maintain a neat appearance in their surroundings to render the flower-garden as attractive as possible.

THE HARDY FRUIT GARDEN.

By A. R. SEARLE, Gardener to the Marquis of NORTHAMPTON, Castle Ashby, Northamptonshire.

Peach.—After the fruits of the earliest varieties of wall Peach trees have been gathered, the trees should be given a thorough syringing with some insecticide; in addition to this, the foliage should be sprayed with clear water during fine weather, as this will assist to keep the leaves clean and healthy until they fall. Varieties that are ripening their fruits must be frequently examined, and the Peaches gathered before they are over-ripe, otherwise they will lose much of their flavour. The fruits should be gathered immediately the stalks part easily from the stem, and if not required for immediate use, stored in a well-ventilated fruit room. Continue to pinch all the lateral growths, and tie back any leaves that prevent the sun's rays from reaching the fruits, for plenty of air and light will assist them in developing a good flavour. Any shoots intended to be removed after the crop is gathered may be shortened at this stage; this will assist the fruits to swell and admit more air and light to the growths that will furnish next season's crops. Earwigs are specially numerous this season, and trapping must be persevered with, otherwise they will cause much damage to the ripening fruits.

Apricot.—When the trees are cleared of their fruits they should be given a similar spraying to that recommended for Peach trees. After the fruits have been gathered remove any branches or useless shoots, which is a better practice than adopting severe pruning in the winter as the cut surfaces will heal more quickly now and hard pruning of the dormant wood is liable to result in gumming. Trees that are not making satisfactory growths should have their roots examined early in October, furnishing some fresh compost consisting of good loam, lime-rubble, and bone-meal. After this is applied, make the border thoroughly firm again, and give it a good soaking of water. Trees making extra vigorous growth should be root-pruned about the same time.

Strawberry beds.—Continue to pinch off the runners as they appear and keep the soil between the plants well stirred with the hoe. The showery weather has been favourable to the growth of Strawberries, especially young ones that were planted early. There is still time to plant fresh runners, selecting strong ones, taking care when the weather is dry to keep them well supplied with water. It is our practice here to plant, at a distance of 12 inches apart each way, a batch of Strawberries for furnishing runners in the following season. These will provide early plants for pot culture, and for new beds early in the season. The flower trusses are picked off these stock plants, and only the strongest runners are allowed to develop. Before planting, the ground should be well manured, deeply dug and made quite firm again.

FRUITS UNDER GLASS.

By B. GOODACRE, Gardener to Sir ERNEST CASSEL, G.C.B., Moulton Paddocks, Newmarket.

Pot trees.—The annual repotting or top-dressing of fruit trees in pots may be commenced whenever the growth is completed and before the leaves have all fallen. This work should always be done in good time, particularly in the case of trees which are to be forced early in the following year. It is not necessary to repot the trees oftener than once every two or three years. In the case of those in extra large pots, the same receptacles may be used again after cutting and trimming off some of the old soil and roots. Young trees may be afforded fresh pots of one size larger than those they have occupied. See that both pots and crocks are thoroughly clean; cracked pots may be strengthened by a wire hoop, otherwise the ramming of the soil may cause them to burst. The compost should consist of good fibrous loam with the addition of a small proportion of clean leaf-soil, lime rubble, soot and bonemeal. A few half-inch bones may be placed over the crocks. The compost, as well as the ball of soil about the roots, should be in a fairly dry condition, for it is important that the new compost be rammed firmly, and if at all wet this operation causes it to become pasty and waterlogged. Once the work is commenced, let it be done without delay, as the roots should not be exposed to the drying influences of sun and wind. The clay rims which were fitted to the pots in the early part of the season may be cleared away, also some of the young surface roots. In filling the pots, leave sufficient room for a good supply of water, and the centre of the ball should be slightly lower than the sides, otherwise the water may drain to the sides of the pot, leaving the middle part dry. Those trees which are to be top-dressed may be turned out of the pots, and the old drainage replaced with clean material. Newly-potted trees may be stood in the open, and the pots plunged to their rims. If hot, dry weather prevails, a gentle syringing late in the afternoon will help to preserve the foliage until it is matured and ready to drop naturally. Later in the season when frosts threaten, a layer of long litter may be spread over the ground to protect the roots and pots.

PLANTS UNDER GLASS.

By JOHN DONOGHUE, Gardener to JOSEPH PICKERSGILL, Esq., Bardon Hill, Weetwood, Yorkshire.

Fittonia.—Autumn-raised plants of *Fittonia* are useful for furnishing a groundwork to other subjects of the stove or for planting in hanging baskets. Cuttings inserted around the edges of small pots or shallow pans root readily. *Fittonias* revel in warm, moist conditions, and should never be allowed to suffer from dryness at the roots.

Pancreatum.—The plants are passing out of bloom, and their ripening must be proceeded with gradually. The amount of moisture applied to the roots must be gradually reduced and a lower temperature maintained, but they should not be allowed to become so excessively dry as to shrivel. Expose them to full sunshine and plenty of fresh air. After the foliage has withered, place the pots on their sides, but examine them occasionally to see if water is necessary.

Clerodendron Balfourii.—As the plants pass out of bloom, prepare them for their resting stage, taking care to have the wood thoroughly well ripened. The young shoots must not be allowed to flag. The weaker and useless ones are best removed, as this will allow the others to have all the light and air possible. When the shoots are properly matured place the plants in a temperature of 50° to 55°.

Cyclamen.—Seeds may now be sown for raising next season's stock of plants. If shallow pans are available, these are most suitable and may be filled to within half an inch of the surface with a finely-sifted compost, consisting of, in equal parts, loam, leaf-soil (Oak), and Bedfordshire sand. It is essential that the pans should be thoroughly cleansed and dry previous to filling them with the soil, and an abundance of drainage material is also essential. The *Cyclamen* is frequently slow in germination, and ample drainage will prevent the soil from becoming sour. After the soil in the pans has been watered and allowed to drain for a few hours, the seeds should

be sown thinly and covered lightly with some fine soil. Place a sheet of glass over the pans; stand the seed pans in a frame or pit having an atmospheric temperature of about 60° and keep the frame close. After the seedlings have been somewhat hardened by gradual exposure to the light, they may be afforded a position near to the glass. *Cyclamens* succeed best when grown in an even temperature of about 55°; ventilation must be afforded carefully, so as to prevent cold winds from injuring the foliage. *Cyclamens* which were raised about this time last year are looking extremely well. They may now be given a light top-dressing of some chemical fertiliser and an occasional watering with soot-water. They may be removed to their winter quarters any time during September. Extreme care must be exercised in applying moisture, as the young flower-buds are very liable to damp off. Watering is best done before noon, and the surroundings must be kept drier during the evening. Aphis and thrips are very injurious to *Cyclamens*, and it is advisable to fumigate the house occasionally.

THE KITCHEN GARDEN.

By JOHN DUNN, Kitchen Garden Foreman, Royal Gardens, Windsor.

Potatoes.—No time should be lost in harvesting the Potato crop, as the weather has been unfavourable and, where disease sets in, the tubers will be seriously affected. In this district, the haulm has withered earlier than usual, and some varieties are already badly affected with late blight. Potatoes should be placed in an airy shed for a few weeks before their removal to the clamp or Potato shed for the winter. This will permit of their examination occasionally with a view to removing diseased tubers. It is often more convenient to store them in sheds, as they can be examined in rough weather, when outside work cannot be performed. After lifting the crop burn all the diseased tubers together with haulm.

French Beans.—Seeds should be sown in pots for a batch of French Beans to furnish a supply of pods at the end of October and throughout November. Pots with a diameter of 7 inches should be three parts filled with loamy soil made moderately firm, covering the seeds to the depth of about 1 inch. Place the pots on a bed of ashes in the open until the approach of cold weather, when they should be removed to some light and airy structure. Syringe the plants daily during fine weather to keep red spider in check.

Cabbage.—Plants from the earliest sowing will now be ready for transplanting in a sheltered position. If the ground has been manured for a previous crop, it will not be necessary to further enrich it, but the surface should be broken up with a digging fork. Plant in drills made 18 inches apart, making the soil firm about the roots, and afterwards furnish liberal supplies of water, until the plants are growing again freely. Should slugs be troublesome, dust the ground with hot lime late in the evening or very early in the morning. The main planting of Cabbage should be made about September 20.

Celery.—This crop will need considerable attention to produce the best results. Before earthing up the plants, the trenches should be soaked with weak liquid manure. The earthing up should be done at intervals, and care should be taken not to allow any of the soil to fall into the centres of the plants. Celery that has been already partially moulded will still require water, but this must be applied carefully, so as not to wash the soil into the hearts of the plants. A good system is to make drills on either side at a short distance from the Celery and to fill these several times with water, filling in the soil again when the roots have been thoroughly soaked.

Sweet Marjoram.—Some of the plants may be lifted from the border and potted into 7-inch pots. The most suitable compost is a mixture of three parts loam and one part leaf-soil, with a little rough sand to keep the soil open. After the plants are potted, they should be placed in a shady position until the roots are active, when they may be exposed to the sun out-of-doors and remain in the open until frost sets in; during cold weather the protection of a cool pit will be necessary.

Mint.—Mint that was propagated last spring from cuttings should now be cut down and the

roots allowed to remain dormant until required for the forcing pit in November. The roots should then be lifted carefully and placed on a mild hot-bed, where they will soon produce large quantities of young, green shoots.

Sorrel.—Plants intended for forcing should be treated in a similar manner to that advised for Mint.

Carrots.—The April-sown plants will be ready for lifting. The roots should be stored in a cool, dry shed, placing sand amongst them in sufficient quantity to exclude the light and keep them moist. Avoid placing the roots too closely together, as they will be liable to become heated and deteriorate.

Beet.—Early-sown Beet should be stored in the same manner; if Beet is allowed to remain in the ground after the roots have attained their full size, it becomes coarse and unfit for use.

THE APIARY.

By CHLOEIS.

Feeding.—Feeding is undertaken in the autumn generally with one of two objects in view, namely, with the idea of stimulating the queen to produce plenty of eggs, for the bees raised now are those which will live through the winter to raise the brood for next season; or to make up the quantity of food requisite for all purposes until the bees can gather a further supply next spring. Too much stores cannot be laid upon the necessity for raising as much brood as possible, because the queen will only lay that number of eggs which can be kept at the requisite temperature, and this can only be done by the brood being covered with bees. When a colony is weak in the spring, progress is greatly retarded, and honey production endangered. With regard to the second reason for feeding, it must be remembered that, for a colony to pass unaided through the winter and spring, the hive should contain about 30 lbs. of sealed food. Some bee experts recommend that when food is given for stimulative purposes, it should be given slowly, and for this reason it is best to employ a feeding bottle with a perforated metal cap, containing about nine holes. The great objection to this method of slow feeding is that it takes the bees a long time to appropriate the syrup, and, consequently, what remains in the feeder gets cold and robs the hive of its heat.

How to feed bees.—Take a piece of wood about 6 inches square and half-inch thick; cut a circular hole in the centre about 2½ inches in diameter, and also make a hole in the quilt about 2 inches square, leaving the fourth side to be turned back as a flap. Over the hole place the wood, so that the two holes coincide. Fill a jam bottle to the brim with syrup and tie over the mouth one or two thicknesses of canvas or muslin. When placing the syrup over the feed-hole in the stand, first place temporarily over the mouth of the bottle a piece of paper to prevent the escape of any of the liquid before the bottle is placed in position. When the bottle requires refilling, use the smoker to drive down the bees from the hole and cover it with a piece of slate or glass. Always heat the syrup to 90° or 100°, and when the bottle is placed in the hives wrap it up warmly with quilts to prevent the escape of the heat.

How to make syrup.—The syrup used at this season of the year should be thicker than that used in the spring or summer. The objections to thin syrup are: it may ferment; valuable heat is utilised in evaporating the extra water; or it may cause dysentery. Boil about five pints of water, add 10 lbs. of cane sugar, a tablespoonful of vinegar and half a tablespoonful of salt. Let it boil a few minutes, taking great care not to allow it to burn, for burnt syrup is very injurious to bees. Always place the food in the hive in the evening, when the bees have ceased work, so as to prevent robbing. Feeding should commence not later than the middle of September, so that all may be completed by the end of the first week in October. This year it will be very important to examine the hives carefully in September to see if the bees require feeding. To those who are unaccustomed to judging the amount of food necessary for a hive, the following is a good guide: there should be about 3 square feet of sealed food, i.e., about two full frames, and six or seven half-filled.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Special Notice to Correspondents.—The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

Letters for Publication. as well as specimens of plants for naming, should be addressed to the EDITORS, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Local News.—Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Illustrations.—The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c., but they cannot be responsible for loss or injury.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editors to see.

APPOINTMENTS FOR SEPTEMBER.

SATURDAY, SEPTEMBER 3—
Soc. Franc. d'Hort. de Londres meet.

TUESDAY, SEPTEMBER 6—Scottish Hort. Assoc. meet.

WEDNESDAY, SEPTEMBER 7—
Roy. Caledonian Hort. Soc. Autumn Sh. in Waverley Market, Edinburgh (2 days).

THURSDAY, SEPTEMBER 8—
Nat. Dahlia Soc. Exh. at Crystal Palace (2 days.) London Branch of B.G.A. Excursion.

MONDAY, SEPTEMBER 12—
United Hort. Ben. & Prov. Soc. Coms. meet.

TUESDAY, SEPTEMBER 13—
Roy. Hort. Soc. Coms. meet. (Lecture at 3 p.m. by Mr. C. Herman Senn, on "The Cooking of Vegetables.") British Gard. Assoc. Ex. Council meet.

THURSDAY, SEPTEMBER 15—
Nat. Rose Soc. Autumn Sh. in R.H.S. Hall, Westminster.

FRIDAY, SEPTEMBER 16—
Sheffield Chrys. Soc. Early Show (2 days).

TUESDAY, SEPTEMBER 20—
Nat. Dahlia Soc. Exh. at Royal Bot. Gardens, Regent's Park (2 days.)

SATURDAY, SEPTEMBER 24—
Brussels International Show (Ex. of Fruit and Market Garden Produce) (4 days).

TUESDAY, SEPTEMBER 27—
Roy. Hort. Soc. Coms. meet. (Lecture at 3 p.m. by Mr. Arthur W. Hill, on "South America in its Relations to Horticulture.")

WEDNESDAY, SEPTEMBER 28—
Nat. Vegetable Soc. Exh. at Roy. Hort. Soc. Hall, Westminster.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich—58.9°.

ACTUAL TEMPERATURES:—
LONDON.—Wednesday, August 31 (6 P.M.): Max. 66°; Min. 52°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, September 1 (10 A.M.): Bar. 30.3; Temp. 65°; Weather—Sunshine.

PROVINCES.—Wednesday, August 31; Max. 61° Reading; Min. 56° Yorkshire.

SALES FOR THE ENSUING WEEK.

MONDAY, TUESDAY, WEDNESDAY, THURSDAY AND FRIDAY—
Dutch Bulbs, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.

WEDNESDAY—
Trade Sale of Lilioms Harrisii and longiflorum; Roman Hyacinths and Thousands of other Bulbs in Variety, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 1.

FRIDAY—
A portion of the "Oakdene" Collection of Orchids, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 1.

Under the title of *Agricultural and Botanical Exploration in Palestine*, the United States Department of Agriculture has just issued* the results of Mr. Aaronsohn's investigations into the possibilities of the Orient as a source whence new varieties of plants of economic importance may be introduced into the United States.

* United States Department of Agriculture: Bureau of Plant Industry. Bulletin No. 180. August, 1910.

As Mr. Aaronsohn points out in his introduction, America has already derived a number of valuable plants from Oriental countries; hard Wheats from Russia and Turkey, seedless Grapes and Figs from Smyrna; and he is confident that this list will be extended very considerably in the near future. Nor, having regard to the similarity in climate between such Oriental countries as Palestine and the desert regions of the Western States, would this prediction appear to be unduly optimistic. The sole consideration which would tend to cause this estimate to be accepted with hesitancy lies in the fact that, though the climate of Palestine is characterised by a markedly dry season, the winter temperature is not low. Consequently, though the plants introduced from that region might be expected to withstand drought, they would probably prove susceptible to cold. This, however, is a question which experiment alone can decide.

After a short sketch of the climate of Palestine, the writer proceeds to treat of the vegetation of that country. He points out that, though the extent of Palestine is something like one-twentieth that of California, the number of species which it contains is about the same, namely, 3,000. It is significant that, as Mr. Aaronsohn notes, chalk-loving leguminous plants are well represented in the flora, and that species such as *Medicago*, *Melilotus*, *Trigonella*, *Astragalus*, *Trifolium*, and others are very rich in species. To the nitrogen-fixing powers of these plants is due, in large measure, the fertility of the soil.

Among the plants which Mr. Aaronsohn recommends for introduction into the United States are several species of *Zizyphus*, of which *Z. lotus* is mentioned as bearing a fruit (dôm), which is eaten by the Arabs, and has the taste of dried Apples. He suggests that many of the wild species of *Rosaceæ* will be found useful as stocks in fruit cultivation. The wild Almond, *Amygdalus communis*, which is common in Palestine and Syria, should prove valuable in providing stocks for Almond and Apricots grown on dry and non-irrigable lands, and *Amygdalus orientalis*, possessed of great capacity of resistance both to heat and cold, and growing at altitudes as high as 5,000 feet should make a good stock on poor soils in barren regions.

Of the Palestine species of *Prunus*, the writer mentions *Prunus microcarpa*, *P. ursina* (Bear Plum), and *P. cerasia*. The last-named species possesses a fruit which resembles a Damson in taste and appearance, and is probably, in Mr. Aaronsohn's opinion, the prototype of the cultivated Damson, the name of which is said to be derived from the word Damascus.

The species of *Cratægus* to which particular attention is called are *Cratægus azarolus*, *C. orientalis*, and *C. sinaica*. Experiments have shown that these species make excellent stocks for Pears. The last two species have the additional advantage of growing well in dry, calcareous land. Another plant which the writer considers to be a very promising Pear stock is the wild Pear, *Pyrus syriaca*. We draw particular attention to the fact, which Mr. Aaronsohn points out, that some races of this species, which form a shrub of 20 to 30 feet high, grow in very moist localities, and even in almost swampy ground.

We hope that those interested in fruit

cultivation will carry out experiments into the value of some of the stocks which we have mentioned for service in this country.

Both Palestine and Syria are particularly rich in Apricots, which are grafted generally on the Almond. Mr. Aaronsohn obtained eight varieties from Damascus alone, and he makes the notable observation that when they are grown under similar conditions of soil and climate, there are fully two months between the times of ripening of the earliest and latest varieties. Mr. Aaronsohn recommends the introduction and trial of the various plants we have named, and also of oriental varieties of Figs and Grapes. Other sections of the report deal with forage plants and cereals indigenous to the country. In connection with the latter group of plants it is urged that a thorough botanic-agronomic exploration of Palestine and the neighbouring regions should be made without delay.

Though, from the nature of the case, it may be that Mr. Aaronsohn's discoveries and recommendations are not as a general rule likely to be of value for this country, yet it cannot be doubted that they will prove of the greatest importance to other parts of the British Empire, and particularly to South Africa and Australia. We commend, therefore, this excellent bulletin to all who are interested in the improvement of horticulture in the Empire, and, in particular, to the authorities of the countries we have named. There can be no doubt that, with the help of the new knowledge, though we may not cause the desert to blossom as the Rose, many of the waste places of the earth may be won back to fertility.

The most important lesson which we in this country have to learn from the story of the enterprise in horticultural exploration shown by the Americans, is that it lies with us to make similar investigations with the object of ameliorating our own varieties of cultivated plants, and especially of fruit trees. Year after year, we have to record failures, more or less severe, of such crops as those of the Apple. Not infrequently, this failure is due to frost at the flowering period. In other words, it is caused by the incomplete hardiness of our varieties. Here, therefore, is a promising and important field for experimental investigation; the problem being to breed varieties of Apples which, whilst possessing the high qualities of our best varieties, shall prove resistant to low temperatures.

OUR SUPPLEMENTARY ILLUSTRATION represents a plant of the handsome *Sobralia macrantha alba* in the collection of Sir JOHN EDWARDS-MOSS, Roby Hall, Torquay (gr. Mr. LUCKHURST). The plant, when photographed, had 21 flowers; the next day more than 30 were fully expanded, and altogether it has produced about 100 flowers this season. The first white *Sobralia macrantha* was *S. macrantha Kienastiana*, flowered by Consul KIENAST-ZOLLY, of Zurich, in 1888. Since that time the white-flowered form has appeared in other importations, and has been given the more appropriate name "alba," although there seems to be no variation from the original. Sir JOHN EDWARDS-MOSS gives the following particulars of this plant and of other Orchids in his collection:—"The *Sobralias* are staged against the back wall of the Cattleya-house. I bought the plant in 1903, when it had

five or six small stems. It was potted on, and is now so large that we shall probably have to divide it into four next year. It is grown in the best fibrous loam with a little peat and broken crocks added, and the plants are liberally watered whilst making their growths. I gather that a photograph of a specimen of *Cattleya gigas* (Warszewiczii) was also sent with the one of the *Sobralia*. It is generally believed that the formation of a seed-pod on a plant of this species has often the effect of making a mournful end of it. Now, I have found that, as a matter of fact, the joys of maternity stimulate it to increased effort, and this is an instance of a plant carrying a seed-pod and yet sending out an excellent flowering growth with six blooms. On taking up the floor trellis for cleaning purposes, three good, large, seedling Orchids were found on the lower side of the battens. What they are we cannot imagine, but the event is interesting. Our *Odontoglossums* grow remarkably well, part of them in a house under conditions which I should at one time have thought quite unsuitable, and yet they do as well in the Mexican-house, where the temperature runs up rather high during the daytime, as they do in the cooler *Odontoglossum*-house. What helps us here, I think, are the nights, as, being near the sea and at an elevation of 500 feet, they are always cool. In those tropical days last year—August 6 to 15—when the day temperature was very high, on only four nights during the whole summer did the minimum temperature exceed or even touch 60° Fahr. I am sure you will appreciate what an advantage that is for *Odontoglossum crispum* especially." We commend the concluding remark to the notice of other Orchid growers, for, as we have frequently urged in these pages, the ensurance of low night temperatures is one of the most important points in successful Orchid culture.

EDINBURGH WORKING MEN'S FLOWER SHOW.—The committee of this show has awarded five special prizes for exhibits at the show on August 13, these not having been previously announced. They consisted of Silver Medals, given respectively by Messrs. T. SMITH & SONS, Edinburgh; Mr. J. W. M'HATTIE, City Gardener; Mrs. ALEXANDER; Mr. JAS. WHYTOCK, and the Society; the recipients being Mr. ROBERT MACKIE, for window flowers; Mr. A. S. GILLILAND, the most successful new adult competitor; JAMES BROWN (aged 10), the most successful former juvenile competitor; JAMES BAIRD (aged 10), the most successful new juvenile competitor; and Mr. J. NISBET, who showed the best window-box exhibit.

FLOWERS AT BATTERSEA PARK.—A particularly notable feature of the summer bedding at Battersea Park is the extensive use made of the different varieties of Fuchsia, either as large bushes, dwarf plants, or standards. The present season has been very favourable to their flowering, for in hot, dry summers many Fuchsia blooms drop off in the bud stage. Old and tried varieties are chiefly employed, the majority of the newer kinds being unsuited owing to their large, heavy blossoms. Of dark varieties, *Crimson Globe*, *Scarcity*, *Marinka* and *Charming* are among the best, whilst, of light-coloured kinds, *Mrs. Marshall*, which has been popular as a market plant for more than 40 years, is still unsurpassed. Of this sort, there are some very fine standard plants associated with the *Violas* referred to on p. 103, which still form one of the most delightful features of the park. Of other Fuchsias, the salmon-tinted *Earl of Beaconsfield* and *Mrs. Rundell* show well their value for planting out-of-doors. There is also the old *albo-coccinea*, which was sent out by Messrs. E. G. HENDERSON & SONS, of St. John's Wood, in the 'sixties. In foliage and general appearance, it

resembles the light-flowered forms of the *Mrs. Marshall* type, and like them the sepals are white and the corolla brightly coloured, but the exterior of the tube is reddish, thus giving a parti-coloured appearance to the flower. Of varieties with white corollas, *Mme. Cornellison* is a great favourite, not only at Battersea but in all other parks. It is interesting as being one of the oldest varieties of this colour, having been distributed about 50 years ago. Its only rival is *Ballet Girl*, a larger and bolder flower and of good stiff growth. This variety has of late years been largely employed in gardens not only for bedding but also for greenhouse decoration. The *Lantana* is seen in particularly good form at Battersea, especially *Lantana delicatissima*. There are some splendid examples of this plant, associated with equally fine plants of *Fuchsia Crimson Globe*. It also occurs in several other combinations of flowering subjects. This *Lantana* is everywhere giving great satisfaction during the present season. When fully exposed to sun and air, the flowers are a purplish-lavender tint, but grown under glass they are much paler. The different garden forms of *Lantana* are, generally speaking, less satisfactory this season than usual. Ivy-leaved *Pelargoniums* are on the whole very good. Associated with the *Violas* alluded to are standard plants of several of the bright-coloured kinds, and a few of the pretty pale mauve-tinted *Colonel Baden-Powell*. Large pyramidal plants are freely employed, and, in some instances, associated with dwarfier plants. The varieties chiefly employed are *Mme. Crouse* (silvery-pink), *Souvenir de Charles Turner* (reddish-pink), *Galilee* (deep rose), and *Murillo* (purplish-magenta). A showy bed is planted with *Salvia splendens* "Glory of Zurich," with "dot" plants of *Abutilon Thomsonii* and a bronzy-red *Ricinus*, and an edging of golden-leaved *Pelargonium Verona*.

LEGACY TO A GARDENER.—By the will of the late Mr. THOMAS SUTTON TIMMIS, of Allerton, near Liverpool, a sum of £300 is bequeathed to his gardener, Mr. B. CROMWELL. Visitors to the Shrewsbury Shows will remember that some of the finest specimen plants used to be those exhibited by Mr. TIMMIS. In 1906, the methods of plant culture practised at Allerton were described in these pages by Mr. CROMWELL in his weekly articles on "Plants under Glass."

CANADIAN NATIONAL APPLE SHOW.—An exhibition of Apples will be held in the Exhibition Buildings at Hastings Park, Vancouver, from October 31 to November 5. Prizes to the amount of 25,000 dollars will be offered. The Governor-General of Canada, Earl GREY, is honorary president, and Sir THOMAS SHAUGHNESSY president of the exhibition. The secretary is Mr. L. G. MONROE, 7, Winch Buildings, Vancouver.

BANKRUPTCY STATISTICS: FAILURES AMONGST GARDENERS, FLORISTS, AND NURSERYMEN.—The Inspector-General in Bankruptcy has now issued his report on the working of the Bankruptcy Act in 1909, from which it appears that the total number of receiving orders during the year was 4,070, with liabilities as estimated by the debtors amounting to £5,804,142. The assets as estimated by the debtors were returned at £2,154,034, and the estimated loss to creditors was £5,086,131. There was a decrease of 236 in the number of receiving orders during the year, but there was an increase of £294,193 in the amount of liabilities, an increase of £50,542 in the amount of assets, and an increase of £277,346 in the estimated loss to creditors, as compared with the preceding year. Taking the total figures for Bankruptcy and Deeds of Arrangement, there were upwards of 7,361 failures, with total liabilities amounting to

£9,714,976, and total assets as estimated by the debtors amounting to £4,186,622, or an estimated loss to creditors of £7,777,412. As compared with the figures for the preceding year, there was a decrease of 567 in the number of failures, a decrease of £1,653,420 in the amount of liabilities as estimated by the debtors, and a decrease of £1,462,243 in the amount of assets, and £762,596 in the estimated loss to creditors. The total number of Bankruptcy notices issued was 5,721, of which 2,860 were by debtors and 2,510 by creditors. The number of petitions withdrawn by creditors was 144, number dismissed was 1,054, of which 767 were in the High Court and 287 in the County Courts. In a comparative table attached to the report showing the total failures under Bankruptcy and Deeds of Arrangement for the past five years, the Inspector-General in Bankruptcy gives the following figures with regard to gardeners, florists, and nurserymen, from which it appears that in 1905 there were 31 failures, with liabilities amounting to £27,065. In 1906 there were 32 failures, with liabilities of £62,343. In 1907 there were 45 failures, with liabilities of £35,467. In 1908 there were 48 failures, with liabilities of £43,811, whilst in 1909 there were 48 failures and liabilities amounting to £32,764. It will thus be seen from the above figures that last year there was a decrease in the amount of liabilities of £11,047 as compared with 1908. Another table attached to the report gives particulars of the liabilities and assets of women who failed in various trades and occupations, from which it appears that in 1909 one woman carrying on business as a market-gardener had a receiving order filed against her, with liabilities amounting to £72 and assets £11. One woman carrying on business as a market-gardener executed a deed of assignment with liabilities amounting to £219 and assets £137, making a total of two failures, with liabilities amounting in the aggregate to £291 and assets £148.

FOOT AND MOUTH DISEASE IN YORKSHIRE.—The Board of Agriculture and Fisheries has made an order revoking, as from Monday, August 29, the Yorkshire (Foot and Mouth Disease) Orders. The effect of the rescinding order is to withdraw all the general restrictions on the movement of animals which were imposed by the Board in connection with the outbreaks of foot and mouth disease in Yorkshire.

DUNFERMLINE ROSE SHOW.—At a meeting of the Carnegie Dunfermline Trust, held in Dunfermline on August 25, the trustees decided to award a Gold Medal to Messrs. DOBBIE & Co., Edinburgh, for their exhibit of Sweet Peas; and a Silver Medal to Mr. JAMES ANGUS, Penicuik, for his group of Carnations, at the recent Dunfermline Rose Show.

GIFT OF NORFOLK PARK TO SHEFFIELD.—Norfolk Park, an estate of about 60 acres, the use of which the Duke of NORFOLK has permitted to the citizens of Sheffield for some years, was on Saturday formally presented to the city. This gift increases to about 160 acres the extent of land which the Duke had given to Sheffield for parks. Mr. H. COVERDALE presented the deed of gift on behalf of the Duke, who was unable to be present; and the Lord Mayor, Lord FITZWILLIAM, in accepting the document on behalf of the inhabitants of the city, expressed hearty thanks to the donor for his munificence. Mr. COVERDALE stated that the Duke thought that, in the event of the estate ever coming into the hands of trustees, they might be advised to cut up the beautiful park for building purposes, and it was in order to avert that risk and to secure the park to the public for ever he decided to offer it to the Corporation.—*Times*.

THE DECORATED DESSERT TABLES AT THE SHREWSBURY SHOW.—With respect to the competition in the class for a decorated dessert table at the recent Shrewsbury Show, readers will remember that our report stated that the published list of points was scarcely satisfactory. The honorary secretaries have since informed us that the judging of the exhibits occupied four hours, which accounted for the delay in making the awards and for the hastily-compiled point-lists. As the pointing in such a class has very great interest for fruit cultivators, we have pleasure in publishing more detailed lists of the 1st and 2nd prize collections, now kindly furnished by the secretaries. These are as follow:—

FIRST PRIZE EXHIBIT SHOWN BY THE DUKE OF WESTMINSTER
(Gardener, Mr. N. F. BARNES).
Points Awarded.

Dishes.	Maximum No. of Points for each Dish.	No. of Points Awarded Each Dish.				Total.
		No. 1 Dish.	No. 2 Dish.	No. 3 Dish.	No. 4 Dish.	
Apples ...	7	6½	7	5½	6½	25½
Apricots ...	6	5	—	—	—	5
Figs ...	7	6	—	—	—	6
Muscat of Alexandria ...	11	(1) 9	(2) 8	—	—	17
Other Muscats & Black Hambro' ...	10	(3) 7½	(4) 7	(5) 7½	—	22
Other Grapes ...	9	(6) 8	(7) 7	—	—	15
Melons ...	8	7	7	7	6	27
Nectarines ...	8	8	6½	6½	6	27
Peaches ...	8	7½	6½	7	7	28
Pears ...	8	6½	5½	6	6	24
Plums ...	6	5	—	—	—	5
Beauty of Flower &c. ...	6	—	—	—	—	5
General Arrangement ...	6	—	—	—	—	5
						211½

SECOND PRIZE EXHIBIT SHOWN BY THE EARL OF HARRINGTON (Gardener Mr. J. H. GOODACRE).
Points Awarded.

Dishes.	Maximum No. of Points for each Dish.	No. of Points Awarded Each Dish.				Total.
		No. 1 Dish.	No. 2 Dish.	No. 3 Dish.	No. 4 Dish.	
Apples ...	7	6	6½	7	—	19½
Apricots ...	6	4½	—	—	—	4½
Figs ...	7	5	5½	—	—	10½
Muscat of Alexandria ...	11	(1) 7	(2) 6	—	—	13
Other Muscats & Black Hambro' ...	10	(3) 7½	(4) 9	(5) 9½	—	26
Other Grapes ...	9	(6) 5½	(7) 8½	—	—	14
Melons ...	8	6½	6	5½	5½	23½
Nectarines ...	8	6	6	6	5½	17½
Peaches ...	8	7	6½	6½	7	27
Pears ...	8	6½	6½	6½	6	25½
Plums ...	6	5	5	—	—	10
Beauty of Flower &c. ...	6	—	—	—	—	5
General Arrangement ...	6	—	—	—	—	4½
						200½

We are given to understand that arrangements will be made in future for the judging of this class to commence at 9 o'clock a.m., as was suggested in our report. There is also a proposal that an additional judge shall be appointed to assist the two judges who have hitherto discharged the onerous duties imposed by this particular competition. The points awarded for each dish will be displayed as soon as possible after the completion of the judging.

SCHOOL GARDENING IN SOUTH-WESTERN SCOTLAND.—The annual distribution of prizes to those pupils who have chiefly excelled during the last summer in the practice of amateur horticulture was made by Mrs. McDouall, of Logan, at Port Logan School, in Kirkmaiden, on Monday of last week. After distributing the prizes to the successful competitors, Mrs. McDouall congratulated the latter highly on the wonderful dimensions of the vegetables and the effectiveness of the flowers. In many instances so close was the competition that the judges had considerable difficulty in arriving at their decisions.

HONORARY DEGREES FOR BOTANISTS.—In connection with the visit of the British Association, the University of Sheffield will confer the honorary degree of Doctor of Science on a number of leading representatives of science in this country, including Professor BATESON and Mr. FRANCIS DARWIN.

ASSOCIATION OF AUSTRIAN TREE NURSERYMEN.—The third meeting of this association is to be held on September 4 to 6 at Teplitz, Austria. At the close of the meeting excursions will be made to Eisenberg and Seestadt, in order to visit the nurseries and park of the Duke of LOKOWITZ, and to Dresden, Germany, where the more important nurseries of the neighbourhood will be inspected. The chairman of the meeting is Mr. W. KLENERT, nurseryman, of Graz, Styrie, Austria.

FLOWERS IN SEASON.—Messrs. KELWAY & SON, Langport, Somerset, have sent us spikes of some remarkably choice Gladioli, the blooms showing extraordinary size and handsome colouring. The varieties were:—Duke of Richmond (bright rose), Dr. Hastings (a suffusion of light salmon on a pale ground), Prince Henry of York (orange-scarlet, a very fine flower), Nonpareil (very large, white and purplish-crimson marking), Snowden (a fine white variety, with mauve-faced stamens), and Lady Inchiquin (rose-pink, splashed with carmine, and a blotch of yellow on the lower segment).

ENGLISH SUGAR BEET.—Sugar Beet grown in England was exhibited for the first time at a stand in the New Corn Exchange on August 22. It was cultivated in the Sleaford district of Lincolnshire, and the six roots on show at the New Corn Exchange were from an excellent crop now being grown as the result of many experiments with Beets of one variety and another for the purpose of producing the kind best suited for the manufacture of sugar. According to *The Times*, the products of these trial growings, which amount to several thousands of tons, have been bought by Dutch sugar refiners at 17s. per ton, delivered in Boston, Lincolnshire. The refiners pay the freight of these roots to Holland, and send them back again in the form of granulated sugar, paying not only the return freight, but the sugar duty of £1 16s. 8d. per ton, and nevertheless make a profit. The object of the cultivators of the Sugar Beet in Lincolnshire, however, is rather to encourage the manufacture in this country of at least a portion of that supply of sugar which is imported from abroad. The roots seemed to be in fine condition. They were said to be double the weight and of equal sugar content to the Beet grown in Germany. The produce of the crop in Lincolnshire is 25 tons to the acre.

WOMEN AS GARDENERS AND FARMERS.—At the recent congress on women's work at the Japan-British Exhibition, the subjects discussed included lady gardeners and lady farmers, this part of the programme being arranged by the Hon. FRANCES WOLSELEY, Head of the Glynde School for Lady Gardeners, assisted by Miss F. WILKINSON, Head of the Swanley Horticultural College. Lady FALMOUTH occupied the chair. Miss JESSIE SMITH read the first paper on lady gardeners. She wisely advised a lady student in gardening to serve, if possible, under an efficient head gardener after leaving college, and before taking up a post. The Hon. Mrs. GELL followed on the subject of openings for teachers in Nature Study. Mr. INIGO TRIGGS next read a paper on "Garden Design." He said the immense advance of late years in domestic architecture made many realise the close connection between the

house and garden, hence the growing demand for expert and well-trained garden designers. Miss DUNNINGTON said that, in jobbing gardening, the possibilities to a girl of originality and imagination are very great. Miss DIXON read a paper dealing with "Market Gardening," a branch which she said called especially for business-like qualities, enterprise, and hard work. Dealing with lady gardeners in the Colonies, Miss TURNER said there was no place there for lady gardeners pure and simple, but if a girl had a knowledge of cooking and washing and could turn her hand to other work, there was opportunity for her, especially in Canada. Miss B. JONES gave an account of gardening in America, and Mrs. SOWERBY read the final paper on "Lady Florists." At the conference on lady farmers, papers were read on the different branches of farming, including poultry-keeping, dairy-making, fruit-preserving, bee-keeping, and pony-breeding.

WESTON-SUPER-MARE FLOWER SHOW.

Mr. C. J. ELLIS, Weston Nurseries, Weston-super-Mare, was awarded the Coggins Challenge Cup, together with two guineas in money, offered for the best exhibit of a group of plants arranged for effect in a space of 75 feet, Mr. W. BROOKS, Whitecross Nurseries, being placed 2nd. The two large classes for groups of plants were staged along the centre of one of the tents, and in reporting the show we regret to say that we confused the two classes, a mistake which, as we understand, was committed by the judges, who originally made their awards on this basis. Mr. ELLIS was also awarded a Silver-gilt Medal for a non-competitive group.

ABERDEEN AND NORTH OF SCOTLAND COLLEGE OF AGRICULTURE.

—The calendar of this college, just issued, gives details of the scheme of instruction for the session 1910-11. Included in the scheme is a course of 50 lectures in forestry, for the purpose of enabling the student to qualify for the B.Sc. (Agric.) degree. This course is specially recommended for intending factors, land stewards, landowners, and all who have to do with the management of land. It is also suitable for those who hope to enter the employment of proprietors or land companies abroad, as economic botanists, or in any similar capacity. For foresters or those who intend to make a special study of forestry, and those who wish to prepare for the forestry diploma granted by the Highland and Agricultural Society of Scotland, the further course, extending over an additional 50 meetings for lectures and practical work, will be necessary. There is a considerable demand for forestry officials by the various Colonial Governments. Departments of forestry have been started by most of the colonies, and these are likely to develop extensively in the near future. For practical work, through the liberality of several landed proprietors, excellent facilities are afforded to intending students. The close proximity to Aberdeen of large wooded areas, place it in a very advantageous position for the teaching of forestry. Shorter courses of lectures are also to be provided, both at the college and at centres throughout the college district, where there are suitable and sufficient wooded areas. The college authorities are also prepared to give assistance to school boards and teachers in the matters of advice on the planning, laying-out, equipment, and general work and management of school gardens within their area. In this connection the members of the county staffs are prepared to visit schools to give personal assistance with the work of school gardens. In order to still further promote this work excursions for teachers will be arranged to schools where gardens are already in operation.

GRAPES AT THE RECENT SHREWSBURY SHOW.

I MADE a close inspection of the more prominent exhibits at the recent Shrewsbury Show, and it was evident to me that the excellence of the show was well maintained in all the chief classes. In the Grape classes, good quality was a predominating feature, and those Grapes not remarkable for their flavour were at a comparative discount. I did not, for instance, note any bunches of Black Alicante in the chief exhibits in the champion class, nor did I see any of Gros Colmar, nor yet, again, of that once much-lauded variety, Diamond Jubilee. In glancing over the names given in the *Gardeners' Chronicle* report on p. 147, I notice that Gros Maroc was the only variety the quality of which can be called into question. All the rest shown in both the 1st and 2nd prize stands are noted for their excellence. This was most gratifying to me, an old exhibitor and grower, who has always maintained that quality should predominate. This result has undoubtedly been brought about by allotting the maximum number of points to those only that are of the finest quality.

I did not, however, note any well-finished bunches of Mrs. Pince, one of the most difficult Grapes to grow to perfection. Neither was Appley Towers nor Alnwick Seedling prominent, so far as I could see, in any large collection. Neither of these varieties is really needed in August or in September. They are both easy to grow and the berries colour readily, but the quality is only second-rate. Of white Grapes other than Muscats, the best, to my mind, were Lady Hutt in Mr. Barnes's exhibit, and Buckland Sweetwater. Lady Hutt is a Grape well worthy of more extended culture, being handsome in appearance when shown as these were, and of most refreshing flavour. Those of Buckland Sweetwater were, I thought, the best I have ever seen as regards finish, but I doubt if their flavour equalled their good looks. I was sorry not to observe any good examples of either Mrs. Pearson or Dr. Hogg. Both are splendid white Grapes when well grown, much better in every sense than either Foster's Seedling or Buckland Sweetwater: neither of the latter can be compared to them, though they are easier to grow, hence they are more often shown. It is a pleasure to record the presence of so many well-finished examples of Black Hamburgh, but not one bunch appears to have been staged in either the 1st or 2nd prize exhibits in the champion class. This is regrettable, and does not put this fine old Grape in its proper position. No excuse could be urged on the ground of unfavourable season, for it has been quite suitable in every respect. Madresfield Court was also staged in splendid condition: it is evident that the requirements of this grand Grape are now thoroughly well understood. If I were restricted to growing one black Grape only I should select Madresfield Court Black Muscat. Chasselas Napoleon won the 1st prize for "any other white Grape," a poor variety at its best. It was gratifying to note that there were not any outstanding bunches remarkable for their individual size. Perhaps the largest were those of Madresfield Court, the berries of which were well coloured and of good size. Referring more particularly to white Grapes, both Muscat of Alexandria and Canon Hall Muscat were staged in splendid condition, the berries being in most cases of full size, and the colour in many instances all that one could wish. There was also an absence of shrivelling, as is sometimes seen in Muscat of Alexandria. I do not remember to have seen so many good bunches of Muscat Grapes at Shrewsbury for some years past. Lovers of quality in flavour would like to see some encouragement given to such high-class Grapes as Muscat Champion, Ascot Citronelle, Grizzly Frontignan, Ferdinand de Lesseps, Dr. Hogg, White Frontignan and Royal Muscadine. If a class were devoted to, say, four of these varieties, it would be possible for present-day growers to see upon the show-

boards some of the finely-flavoured and most refreshing Grapes of a quarter of a century back. One is led to think also of those Grapes that came forth with much flourishing of trumpets, e.g., Duke of Buccleuch, Golden Champion, Diamond Jubilee and Melton Constable. Two old black Grapes not needed are Barbarossa and Black Prince, nor do we require either White Tokay or Trebbiano of the white kinds. West's St. Peter's appears to have dropped out of cultivation, which is to be regretted, for it was an excellent Grape in October and November. I am hoping to see good results from Prince of Wales when its culture is better understood. It should be a fitting companion to Lady Downes. *Vitis*.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

STORM AT NASEBY HALL.—A severe storm, accompanied by thunder and lightning, occurred here on August 29, about mid-day. From half-past 1 p.m. till about five minutes past 2 p.m. close upon half an inch of rain fell. *A. Gooden, Naseby Hall.*

THE NEW "GROUP" CLASS AT SHREWSBURY.—The illustration in fig. 57 of the first-prize exhibit in the new "group" class at Shrewsbury does not suggest any striking or novel features. That was the opinion of all who saw the new groups. Modelled, as they were, on the older decorative plant groups, and with no lack of similar material, they were distinctly disappointing to all who looked for something original, not only in arrangement, but also largely in material. The committee should withdraw their class for 15 large specimen plants, as these are out-of-date. They could add the prizes in that class, amounting to £42, to the £57 10s. offered in the new group class, making, roughly, a sum of £100, and divide this into prizes of £30, £25, £20, £15, and £10, at the same time greatly increasing the spaces allotted to each group, and require that aquatic, semi-aquatic, and hardy plants, with water effects, should be the dominant features, so as to induce some of our leading hardy plant growers to enter. Such a class would then provide scope for exhibits which would indeed interest and delight all who saw them. But it should be a condition that between each group there should be footways of at least 4 feet, so that the public could see them from all sides. *Visitor.*

JUDGING AT SHREWSBURY FLOWER SHOW.—As usual, I read with much interest the report of this exhibition. Having acted as a judge on and off for more than 40 years, I was keenly interested in the remarks on the decorated fruit tables. Three hours and a half may seem a long time for adjudicating, yet when it is considered that there were 150 separate decisions to come to, apart from the decorations, a trifle under one and a half minutes for each dish is not too much. Whatever may be said against point judging, it is clear that in classes such as this no other method is so applicable. Your reporter hit the right nail on the head in insisting that judging should begin earlier. In large classes, it is wise to have three judges, one to write the points and act as referee. Seven points are ample in any class, and there is no need for hair-splitting by having half points. In cases of equality a general look after pointing would settle the matter. For decorations, I would suggest as a maximum double the number for each dish, viz., 14 points. The cards to be placed on the tables should be so printed that each dish has a consecutive number up to 30. As showing that the principle underlying point judging is not new, the following may be mentioned. My first experience in judging was in 1866 at Old Basing, a well-known village in Hampshire. My colleague was the late Mr. James Smith, of Basingstoke. In the cottage garden classes there was a keen competition. Mr. Smith came prepared with a penny memorandum book, with the names of the vegetables and small fruits alphabetically written therein, as many pages as there were entries. A space was provided for herbs and the general condition of the exhibit at the

end of the tables. Instead of numbers, g., v.g., v.v.g., i.e., good, very good, very very good, were allotted, and many gardens have since been judged by myself and others on the same principle. *Yorkshire Gardener.*

JUDGING AT LOCAL FLOWER SHOWS.—The subject referred to by *Kingston Hill*, on p. 166, is worth discussing. In my opinion, too much importance is attached to Leeks at the summer flower shows, and, in a lesser degree, to Celery. *Kingston Hill* says: "Surely it is to a gardener's credit to produce things out of season." But how many employers would appreciate a dish of Leeks in June or July? I make bold to say not one in ten. While a dish of Peas might be appreciated as a luxury in mid-winter, the average employer would not thank his gardener for producing Leeks, Celery, and Parsnips for use in midsummer. Celery and Leeks are favoured by exhibitors more for effect in an exhibit, or as a background to their collections, than for their usefulness in that particular season. In the same way, Tomatos add colour and attractiveness to an exhibit. My experience is that the demand for Leeks as a culinary vegetable is very limited at any season of the year. Again, Beet is more in demand all the year round for salads than is Celery. *J. P. Brandy.*

— If it is asked "When is a vegetable out of season?" it is equally pertinent to ask "When is it not in season?" Green Peas, French Beans, new Potatoes, or Asparagus may not be in season at Christmas, but who would dream of rejecting them on that account? If under cool storage, Seakale was so retarded as to furnish delicious blanched heads in July and August, would judges disqualify a collection of vegetables in those months if it was included? If the conditions of a class absolutely forbid not only forcing, but any form of glass culture, even to the raising of seedlings, then the objection referred to could be understood; but conditions so absurd are never imposed. If Leeks are of good quality, being long, even, well blanched, and perfectly fit for the table, they are in season at any time of the year. *A. D.*

PLANE TREES AND THROAT TROUBLES (see p. 105).—Men engaged in these nurseries have complained on several occasions that Plane trees are injurious to health. The first time it was brought to my notice was some five years ago, when two men were trimming the stems of young Planes. It was either in late June or early July, and there was a considerable number of young stem-growths to cut away. The weather was hot and close, and after the first day both men were in a condition much resembling a bad attack of hay-fever. The eyes were red, swollen, and painful, and the nose and throat very sore and inflamed. Their complaints of a pricking sensation in these organs first led to a suspicion that the Planes were responsible, and subsequent examination confirmed it. After they had been away from the Plane trees for two or three days both got as well as ever again. Since that time, the work of trimming the branches has been left until after the fall of the leaf. The hairs on the leaf of the Plane are very minute, and in the mass are like a lot of down, but their pointed character can easily be seen by an ordinary magnifying glass. They are most plentiful at the time the leaves reach their full development. *J. Clark, Messrs. J. Waterer & Sons' Nursery, Bagshot, Surrey.*

NANDINA DOMESTICA.—I was pleased to read in the report of the Shrewsbury Flower Show that this bright-foliage plant was employed in some of the exhibits in the new "group" class. Its value appears to be little appreciated, but when cultivated as a pot plant for conservatory decoration, or planted out in a warm, well-drained soil, it always claims attention. This new class opens up a wide scope for exhibiting many hardy plants, which can be cultivated to greater perfection by affording them a little protection in winter. *W. H. Clark, Hampton, Middlesex.*

DODDER.—Referring to Mr. H. S. Thompson's note on p. 166, if this plant is more abundant than usual in Hampshire and Dorset it must be abundant indeed; for I have never seen it so plentiful as in suitable country within a 20 mile radius of Bournemouth. *Harold Evans, Llanishen, Cardiff.*

QUEEN WASPS.—I beg to confirm Mr. A. Groves's note. Many years of observation have convinced me that the number of queens of the social wasps appearing in spring is no indication of the strength of the swarms to be expected in autumn. That seems to be regulated by some conditions, meteorological or other, which have not yet been detected. *Herbert Maxwell, Monreith.*

EARTHWORMS.—The all too brief article on earthworms on p. 157, from Mr. J. Willis, is most instructive. Great ignorance exists as to the valuable work done in the soil by common worms. From all sorts of people who possess gardens, and especially those who have lawns, complaints as to the action of worms and requests for information as to how to get rid of them are common. Not one of these people have any knowledge of the beneficial work done in the soil by worms. These creatures may be a nuisance when they get into flower-pots containing plants, and must be expelled; but in the open ground, or on lawns, they are of great benefit. Mr. Willis rightly mentions how frequently their casts on lawns are swept up and taken away. It is far wiser to have them evenly distributed by using a long birch broom backward and forward, as then the casts soon become food for the grasses. *A.*

LARGE GOOSEBERRIES (see p. 172).—May I correct a slight error in reference to the fruit of the variety London, weighing 37 dwt. 7 grains, grown by John Flower, who was my grandfather? This berry was grown at Little Stoke, a village near Stone, Staffordshire, and the same berry was shown at Cheadle, Bootle, Staffordshire, and at Birmingham, where it won a cup. Gooseberries weighing over 30 dwt. are quite common in and around the district of Stone, Staffordshire. *Harry Smith, Castlerigg Manor Gardens, Keswick.*

SOCIETIES.

ROYAL HORTICULTURAL.

AUGUST 30.—The exhibition at the meeting held on Tuesday last in the Society's Hall provided a very pretty display. Hardy flowers were the most numerous, including large exhibits of Dahlias and border flowers, especially Delphiniums, Phloxes, Pentstemons, and early-flowering Chrysanthemums. But the most noteworthy exhibit was a collection of new plants raised from seeds sent home by Mr. E. H. Wilson during his last expedition to China, and shown by the Hon. VICARY GIBBS (see fig. 72). There were about 700 plants in all, representing 200 species and 400 varieties. This outstanding exhibit was awarded a Gold Medal. The FLORAL COMMITTEE granted 12 Awards of Merit, six being given to new Dahlias. There were several good groups of Orchids; the ORCHID COMMITTEE recommended one First-class Certificate, three Awards of Merit, and one Botanical Certificate. There was very little before the FRUIT and VEGETABLE COMMITTEE beyond a group of hardy fruits and a collection of Melons, but the Committee granted four Awards of Merit, one to a Melon and three to varieties of Tomatos that had been grown at Wisley for trial. At the afternoon meeting in the Lecture Room, Mr. J. H. Priestley read a paper on "The Effect of Overhead Electrical Discharge upon Plant Growth," a subject to which reference was made in these columns on June 18, p. 406.

Floral Committee.

Present: W. Marshall, Esq. (in the Chair), and Messrs. Chas. T. Drury, James Walker, T. W. Turner, Geo. Reuthe, John Green, George Gordon, J. W. Barr, J. F. McLeod, Arthur Turner, Chas. E. Pearson, W. P. Thomson, W. J. James, E. H. Jenkins, Geo. Paul, A. Kingsmill, E. A. Bowles, W. B. Cranfield, Jas. Hudson, and Herbert J. Cutbush.

The collection of new and rare species of Chinese plants (see fig. 72), shown by the Hon. VICARY GIBBS, Aldenham House, Elstree (gr. Mr. Edwin Beckett), was the outstanding feature of the exhibition. The seeds, collected by Mr. E. H. Wilson in Western China, were sown 32 months ago, and many of the subjects were already of large proportions. The 700 plants included many which are new to science and unnamed. Amongst the more striking were:—

Vitis megalophylla, with large, pinnate, handsome foliage, quite distinct from *V. armata*; varieties of *V. sinensis*; *Vitis* (134) and (235), both handsome species, with striking silvery reverse to the foliage; *Vitis* (603), a strong grower and quite distinct; *V. Delavayi*; *Rubus coreanus*, *R. innominatus*, *R. conduplicatus*, *R. lasiostylus*, all strong growers; *R. irenaeus*, a prostrate plant, suitable for planting in the shade; *R. omiense*; and *R. polytrichus*, quite distinct, and one of the handsomest of all vines. *Cotoneasters* were represented in great variety, including *C. applanata*, *C. rugosa* Henryi, *C. acutifolia*, and *C. humifusa*, a particularly handsome, trailing plant; *Viburnums*, including *V. rhytidophyllum*, and an unnamed, striking plant, numbered 1288. *Clematis Soulieana* has pale-yellow, tubular flowers, possessing a sweet perfume; *C. Armandii* has deep-green, glossy foliage. *Liriodendron chinense* has very large leaves; *Piptanthus* (885), of which Mr. Wilson speaks highly; *Styrax* (884), *Hydrangea* (772) which Wilson describes as the best in China; *Stranvæsia undulata* and *S.* (1064), both shown in fruit. *Liquidambar formosana* possesses deep-bronze foliage. Of *Rubuses* there were *Rubus Lambertianus*, an excellent subject for pillars or massing in beds, as is *R. Playfairi*, with leaves similar in outline to those of *R. bambusarum*, but totally distinct; the densely tomentose *R. Parkeri*; and *R. ichangensis*, with a glaucous metallic lustre. *Berberies* were shown in great variety, many being useful for the margins of shrubberies and the rock-garden. *Berberis* 564 is, apparently, a fine form of *B. Wallichiana*. Other genera noticed were *Pyrus*, *Poliothyrsis sinensis*, *Schizandra* (a fine climber), *Cercis chinensis*, *Rosa*, including *R. sericea* (179), with very elegant leafage, *Chimonanthus*, *Ailanthus*, *Prunus*, *Spiræa*, *Ptelea*, *Schizophragma*, *Ehretia*, *Zanthoxylum*, *Acer*, *Cocculus*, and *Staphylea*. (Gold Medal.)

ROSES.

Messrs. FRANK CANT & Co., Rose Gardens, Braiswick, Colchester, showed blooms in considerable numbers, and considering the unfavourable character of the weather of late, these were in most instances in very good condition. There were pyramidal stands 3 to 4 feet in height of the Lyon Rose, Frau Karl Druschki, Gottfried Keller, Mme. Caroline Testout, Mme. Melanie Soupert, and others. Among the vases of less height there were to be observed blooms of Mrs. J. Laing, Edouard Meyer, Earl of Warwick, Mme. Abel Chatenay, Prince de Bulgarie, Farben Königin, Harry Kirk, La Tosca, Lady Ursula, Papa Gontier, Mrs. John Bateman, and Königin Karola. (Silver Flora Medal.)

A bright stand of Roses was put up by Messrs. W. & J. BROWN, Stamford and Peterborough. The blooms were remarkably bright and fresh, and embraced a good selection of popular kinds. (Bronze Flora Medal.)

FERNS.

Messrs. H. B. MAY & SONS, Upper Edmonton, exhibited exotic species in large numbers and in the best cultural condition. *Nephrolepis exaltata* in variety occurred frequently. Other remarkable species were *Lomaria ciliata princeps*, a garden form, *Nephrolepis Duffii*, *Davallia fijiensis elegans*, *D. tenuifolia*, *Adiantum Mayi* (dwarf and distinct), and *Lomaria discolor*. (Silver-gilt Banksian Medal.)

DAHLIAS.

Messrs. JAMES STREDWICK & SON, St. Leonards, Sussex, exhibited a stand of new varieties of Cactus Dahlias. Showy blooms were observed in Viscount, a flower of a deep scarlet colour; New York, coppery red, the tint being most intense in the outer florets; Irresistible, a very large flower, having a canary-yellow centre with a rosy tint towards the margin; and Beauty of Sussex, a flower of a lovely rosy purple colour.

Messrs. CARTER, PAGE & Co., London Wall, had the largest group of flowers in their display of Dahlias. The varieties were principally of a Cactus type, but all the other sections were represented. The method of staging was very pleasing, the blooms being interspersed with *Kochia scoparia*, *Asparagus Sprengeri* and trails of *Ampelopsis*, with vases of grasses and sedges at intervals. (Silver-gilt Flora Medal.)

Mr. H. SHOESMITH, Woking, showed a stand of Cactus Dahlias of the variety Prima Donna, a

white flower with a tinge of green at the base of the florets.

Mr. S. MORTIMER, The Nurseries, Rowledge, Farnham, was an exhibitor of Cactus varieties and a few show varieties.

Messrs. J. CHEAL & SONS, Lowfield, Crawley, had many Pæony-flowered Dahlias, also single, and small and large Cactus varieties; these last, being of the thread-floreted section and of large size, made an imposing show. (Silver Flora Medal.)

Messrs. H. CANNELL & SONS, Swanley, Kent, showed large numbers of Cactus and Pæony-flowered Dahlias. (Silver Flora Medal.)

Messrs. T. S. WARE, LTD., The Nurseries, Feltham, exhibited very fine Pæony-flowered and thread-petalled Cactus Dahlias. (Bronze Flora Medal.)

Mr. CHAS. TURNER, Royal Nurseries, Slough, exhibited a large number of single and double-flowered varieties of the Pæony section (Bronze Flora Medal); and Mr. BRAZIER, Nurseryman, Caterham, showed Cactus-flowered varieties, together with a display of perennial hardy flowers. (Silver Flora Medal.)

Messrs. BAKERS, Wolverhampton, exhibited large numbers of Dahlias, and these consisted mainly of Pæony-flowered varieties. The colour effect of the large display of blooms was gorgeous, and would have been more pleasing had some greenery been employed as a foil. (Silver-gilt Flora Medal.)

GREENHOUSE PLANTS.

Messrs. J. VEITCH & SONS, Royal Exotic Nursery, Chelsea, showed in flower several varieties of their Javanico-jasminiflorum hybrid Rhododendrons, viz., Hercules, Balsaminiflorum Rajah, Indian Yellow, Primrose, President; cut blooms of nine distinct varieties of Streptocarpus, a new and much-improved type, having larger flowers, and finer colours and markings; the selfs in particular were great improvements. Plants in flower of the fine new varieties of *Canna indica* gave a blaze of colour. *Bouvardia* Mrs. R. Green, *B. jasminiflora paniculata*, *B. Maiden's Blush*, *B. The Bride*, *B. Vreelandii*, and *B. Reine des Roses* were very pretty looking after the surfeit of colour in the Dahlia exhibits. (Silver Flora Medal.)

Messrs. STUART LOW & Co, Bush Hill Park, Enfield, showed plants of *Rochea falcata*, finely flowered; *Diplacus glutinosus*, *Grevillea Preissii*, *Ceanothus Gloire de Versailles*, a dwarf species of Pomegranate from Japan with flowers externally of a scarlet colour, *Tremandra verticillata*, and others.

A group of a yellow-ground, border Carnation with red markings was exhibited under the name of The Dowson, by the raiser, Mr. CHAS. DOWSON, Middlesbrough.

HARDY HERBACEOUS PERENNIALS.

Mr. W. H. YOUNG, Mercury Nursery, Romford, showed a fine, bright-crimson-coloured Pentstemon named Southgate Gem, the flowering portion of the stalk having a length of 18 inches.

Messrs. PAUL & SON, the Old Nurseries, Cheshunt, N., showed extensively. The finer subjects included *Rudbeckia atropurpurea*, a flower that has a distinct, rich tint; *Senecio clivorum*, a new introduction; a *Physalis*, somewhat resembling the larger-fruited *P. Franchetti*, but less vivid in colour; *Helenium magnificum*, *H. grandicephalum striatum*, with gold-yellow and brown-coloured flowers; *H. aurantiacum*, *Eryngium*, *Chelone obliqua*, and a quantity of shrubby Phloxes. (Bronze Flora Medal.)

Messrs. BAKERS, Wolverhampton, showed summer Asters in bewildering variety, mostly possessing distinct colours. Especially fine blooms were those of Giant Perfection, of a bright carmine tint; some compact, dwarf-bedding varieties in crimson, blue, rose, and bright cerise, also Mignon Asters in various colours, Incurred Giant, Pæony-flowered, and several more.

Mr. L. R. RUSSELL, Richmond, showed a large collection of hardy Heaths, including *Erica vulgaris*, *E. cinerea*, and *E. vagaris*, together with *Menziesia polifolia*. In all there were 21 varieties. Opposite to these, on the floor, Mr. RUSSELL arranged a fine group of red and yellow-flowered *Celosias*, staged in an attractive manner, with a bank of fine standard Fuchsias at one end. (Silver-gilt Flora Medal.)

Mr. G. REUTHE, Keston, Kent, exhibited some uncommon shrubs and a selection of interesting

garden flowers. Amongst the former were *Berberidopsis corallina*, *Eucryphia pinnatifolia*, and *Tamarix hispida*. The sweetly-scented *Artemisia lactiflora*, also *Gloriosa superba* were introduced in the group. (Bronze Flora Medal.)

Messrs. B. LADHAM & SONS, Southampton, showed varieties of *Lobelia syphilitica*, the most striking being Pink Bedder. The variety Salamander has flowers of an intense scarlet hue.

Messrs. BARR & SONS, King Street, Covent Garden, showed Phloxes in variety, likewise Pentstemons, *Lobelia cardinalis* Queen Victoria, an improvement on the type, Delphiniums, Summer Asters, Pansies, and *Gladiolus gandavensis* varieties. (Silver Banksian Medal.)

THE GUILDFORD HARDY PLANT NURSERY had a pretty exhibit of hardy Alpine plants, including the blue-flowered *Platycodon grandiflora*,

and a large assortment of border Phloxes. (Silver Flora Medal.)

Messrs. GUNN & SONS, Olton, Birmingham, had a very attractive exhibit of perennial Phloxes, in most of the newer and best varieties. Very pleasing is the soft mauve variety named after Miss Ellen Willmott. Le Mahdi is a fine purple variety, and others that were especially good are King Edward VII., reddish carmine; Elizabeth Campbell, white with a rose-pink centre; Lilian, a good white variety; Wilbur Wright, new, with reddish orange flowers; Josephine Gerbeaux, one of the finest of old sorts; and Lord Rayleigh, the best blue Phlox. (Silver-gilt Banksian Medal.)

Messrs. W. WELLS & Co., Merstham, also showed border Phloxes largely, in addition to Pentstemons, border Chrysanthemums, peren-

tone with buff shading, the petals being much frilled at the margins and stained with crimson near the base. From M. VILMORIN, Paris.

Gladiolus Le Luna.—A variety of the *G. nancicanus* section. The creamy blossoms are heavily marked with crimson and flushed with rose in the upper petals. Shown by Messrs. BARR & SONS.

Dahlia Leander (single).—A shapely flower of moderate size, coloured maroon and crimson in flakes and stripes. Exhibited by Messrs. J. CHEAL & SONS, Crawley.

Dahlia Theresa (Cactus).—The florets are cream and blush.

Dahlia Guinevere (Pompon).—A model flower of rosy salmon hue, the florets at the base being of a buff shade. It is one of the most distinct



(Photograph by John Gregory.)

FIG. 72.—COLLECTION OF NEW CHINESE PLANTS EXHIBITED BY THE HON. VICARY GIBBS AT THE R.H.S. MEETING ON AUGUST 30.

Cimicifuga cordifolia with elegant spikes of cream flowers, and *Rudbeckia pinnata* with pale yellow flowers and a conical black disc. Phloxes were well shown by this firm, especially good being Jeanne d'Arc, white, and Josephine Gerbeaux, white with a crimson eye.

Messrs. WHITELEGG & PAGE, Chislehurst, showed fine spikes of *Gladiolus brenchleyensis*, also the beautiful King of Delphiniums, *Lilium auratum* and *L. Wallichianum sulphureum*, these latter being extremely beautiful. Other novelties included a double-flowered Scarlet Gem named Mrs. J. Bradshaw and a bright-red Pentstemon called Southgate Gem.

Messrs. JAMES BOX, Lindfield, Sussex, staged some extra good inflorescences of *Watsonia Ardeni alba*, in a group of other hardy flowers that embraced good Delphiniums, Gladioli, Lilliums,

nial Asters, *Anchusa italica*, and other seasonable garden flowers. (Bronze Flora Medal.)

Mr. AMOS PERRY, Enfield, Middlesex, again made a handsome group with blue and dark-flowered Delphiniums, set off by banks of *Artemisia lactiflora* and a few other hardy subjects, such as *Lythrum roseum*. Notable varieties of Delphiniums were Madame Violet Geslin, blue; King of Delphiniums, blue, double white centre; Lizzie van Veen, pale blue with a white eye; *Belladonna grandiflora*, opal blue; Amos Perry, rosy mauve, with a black eye; Lamartin, turquoise blue and snow-white centre, and Duke of Connaught, crimson purple, with a white eye. (Silver Flora Medal.)

AWARDS OF MERIT.

Gladiolus Safrano.—The flowers are of yellow

of its race. These two Dahlias were shown by Mr. CHARLES TURNER, Slough.

Dahlia Mrs. Douglas Fleming (Cactus).—The long, narrow, incurving florets are creamy white, the flower-head being of good exhibition standard.

Dahlia Crystal (Cactus).—A distinct and refined variety; the florets are coloured rose-pink and tipped with white. Both these were shown by Messrs. J. STREDWICK & SON, St. Leonards.

Dahlia Garden Yellow (Cactus).—The name is suggestive of a decorative variety, though the variety belongs to the true Cactus type. It is a self-coloured flower of much merit. Exhibited by Mr. H. SHOESMITH, Woking.

Lobelia Sam Barlow.—A variety of the *L. cardinalis* section. The refined-looking blossoms,

which are freely borne on tall spikes, are of a rose salmon shade. It is very distinct and a fine acquisition amongst Lobelias. Exhibited by Messrs. BARR & SONS, Covent Garden.

Phlox Elizabeth Campbell (see fig. 73).—A distinct and effective variety of *P. decussata*, the handsome blossoms being of a clear salmon-pink flushed and starred with white at centre. From Messrs. WM. WELLS & CO., LTD., Merstham.

Rose Daphne.—A Polyantha variety said to be perpetual-flowering and mildew-proof. A card stated that it flowered from June to autumn, and there was a certain freshness in the exhibited sprays which carried conviction. The colour is delicate and pleasing, of the shade known as pale apple-blossom. Exhibited by the Rev. J. H. PEMBERTON, Havering-atte-Bower.

Buddleia variabilis gigantea.—The inflorescences are very large—in all probability the largest yet exhibited, but the flowers do not differ materially in colour-effect from some others in cultivation. Exhibited by Hon. VICARY GIBBS, Aldenham House, Elstree (gr. Mr. E. Beckett).

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the Chair), and Messrs. Jas. O'Brien (hon. sec.), Harry J. Veitch, de B. Crawshay, Henry Little, E. G. Thwaites, F. J. Hanbury, Walter Cobb, J. Charlesworth, H. G. Alexander, W. H. Hatcher, A. Dye, W. H. White and Gurney Wilson.

Sir JEREMIAH COLMAN, Bart., Gatton Park (gr. Mr. Collier), staged an interesting group of pretty species, in the centre of which were two fine specimens of the orange-scarlet *Laelia monophylla*, each with many flowers. With them were several fine forms of *Masdevallia Chimera*, *Cryptophoranthus Dayanus* with unusually fine flowers, *Cirrhopetalum guttulatatum*, the pretty *Maxillaria striata*, *Sigmatostalix radicans*, and the new *Polystachya paniculata*.

Lieut. Col. Sir GEORGE L. HOLFORD, K.C.V.O. (gr. Mr. H. G. Alexander), sent the very handsome *Laelio-Cattleya Lustre magnifica* and other fine hybrids. (See Awards.)

DE B. CRAWSHAY, Esq., Rosefield, Sevenoaks (gr. Mr. Stables), showed a selection of fine *Odontoglossums*, including his new and very remarkable *Odontoglossum Theodora* (Rossii \times triumphans), with showily-marked flowers, the influences of the diverse characters of the parents being manifest in the peculiar manner of the elongation of the inflorescence. Mr. CRAWSHAY also showed a finely-blotched *O. crispum* near to the variety Queen of the Earth, a peculiar form of *Odontodia Bradshawiae*, the very beautiful white *Odontoglossum crispum* Mrs. de B. Crawshay, and the extraordinary *O. Lambeauianum* Starlight, the flowers of which are dotted with small rose spots.

J. GURNEY FOWLER, Esq., Glebelands, South Woodford (gr. Mr. J. Davis), showed *Cattleya Rhoda* Fowler's variety (Iris \times Hardyana), an unique plant, quite different from the ordinary forms in that its flowers are shaped like those of *C. Hardyana*, and of the same size. The sepals and petals are pale primrose-yellow, the lip being almost entirely deep rose-purple.

H. S. GOODSON, Esq., Fairlawn, Putney (gr. Mr. G. E. Day), was awarded a Silver Flora Medal for a select group, in which the finest plant was *Cattleya Rhoda* Fairlawn variety (see fig. 67), which secured the only First-class Certificate awarded. With it were several very fine forms of *Cattleya Adula*, a good white *Anguloa uniflora eburnea*, *Cattleya Atalanta* with a fine spike, *C. Gaskelliana alba* with six flowers, *Cypripedium Wiertzianum* having a fine show of bloom on three spikes, the prettily-marked *Odontoglossum Goodsoniae*, *O. ramosissimum*, *Miltonia spectabilis* Moreliana, *Cypripedium Rossetti*, and some *Sophrone-Laelias*.

FRANCIS WELLESLEY, Esq., Westfield, Woking (gr. Mr. Hopkins), showed *Cattleya Lady Chance* with bronzy sepals and petals and claret-purple front to the lip, *Laelio-Cattleya* Mrs. Philip Henrique, an intensely dark-coloured flower of the L.-C. Dominiana class; and L.-C. Mrs. Phayre (L.C. Norba \times C. Dowiana aurea), with creamy-yellow sepals and petals, and rose-tinted lip with gold veining.

Messrs. CHARLESWORTH & Co., Haywards Heath, were awarded a Silver Flora Medal for a showy group, in the centre of which were several grand specimens of the beautiful *Vanda cœrulea*.

There was also a good selection of hybrid Orchids, including *Laelio-Cattleya Elva* of fine colour, L.-C. *Elvina*, very dark and attractive; L.-C. *Venus Leeana*, a distinct hybrid, as well as *Sophrone-Laelio-Cattleya Marathon* and other hybrids with *Sophroneitis grandiflora*, and the very interesting *Oncidioda Charlesworthii* (*Oncidium incurvum* \times *Cochlidoda Noezliana*), with slender, scape like the *Oncidium* parent, and pale mauve flowers, more nearly resembling *Cochlidoda vulcanica* in colour and form than the orange-scarlet *C. Noezliana*. Other choice plants noted were *Bollea Lalindei pallida*, *Odontoglossum bic-*

spikes of spotted flowers being furnished with large, similarly-coloured bracts; various *Odontodas*, *Cattleya superba*, *C. Hardyana*, *C. Gaskelliana* Princess, a pretty white form; *Miltonia vexillaria Leopoldii*, a selection of showy *Laelio-Cattleyas*, the forms of L.-C. *callistoglossa* being specially attractive; the pretty white and fragrant *Brasso-Cattleya Pocahontas*, *Pilumna nobilis*, *Sophrone-Laelio-Cattleya Danae*, and others.

Messrs. JAS. VEITCH & SONS, LTD., Royal Exotic Nursery, King's Road, Chelsea, showed a large form of *Cattleya Hardyana*, which was specially interesting in that the yellow on the



(Photograph by John Gregory.)

FIG. 73.—PHLOX ELIZABETH CAMPBELL; COLOUR SALMON PINK WITH WHITE CENTRE.

(Award of Merit at R.H.S. meeting on Tuesday last.)

toniense album, various hybrid *Odontoglossums*, *Brasso-Cattleyas*, and *Stanhopea tigrina*.

Messrs. STUART LOW & CO., Bush Hill Park, Enfield, were awarded a Silver Flora Medal for an extensive and well-arranged group, in which were many interesting species. The centre of the exhibit contained the very handsome yellow *Oncidium Marshallianum*, and in front of this were *Cirrhopetalum Mastersianum*, the feather-lipped *Bulbophyllum barbigerrum*, *B. papillosum* with long racemes of purple flowers, *B. Godseffianum*, *Cyrtopodium punctatum*, the branched

lip of each flower varied, one being veined, as in *C. aurea*, and another with blotches on each side of the lip, as in the other parent—*C. Warscewiczii*.

Mr. E. V. Low, Vale Bridge, Haywards Heath, was awarded a Silver Banksian Medal for a group in which were several fine varieties of *Cattleya Adula*, the Vale Bridge variety securing an Award of Merit. Others noted were *Cypripedium Maudiae*, *Odontoglossum Uro-Skinneri* album, and a light-coloured hybrid between *C. Gaskelliana alba* and *C. Harrisoniana*.

Messrs. J. & A. A. McBEAN, Cooksbridge, sent the pure-white *Odontoglossum ardentissimum* album, with large and finely formed flowers.

Messrs. SANDER & SONS, St. Albans, staged a fine group, for which a Silver Flora Medal was awarded. The central plants were three of the large, white *Dendrobium Sanderae*, which is one of the finest of recent introductions. Other rare plants noted were *Lelio-Cattleya Gaston Doin*, with yellowish sepals and petals, and rose-purple lip; a very fine *L.-C. Hy. Greenwood*; *Cattleya Chamberlainiana*; the pretty and extremely rare blue-veined, natural hybrid *Vanda amœna*; *Cattleya fulvescens*; *Coelogyne Micholitzii*; the dark-scarlet *Odontodia Devossiana*; and some pretty, hybrid *Odontoglossums*.

Messrs. MANSELL & HATCHER, Rawdon, Yorks., showed *Eria bractescens*, a pretty species, with whitish flowers and purple-tinted lip, the bracts at the base of the flowers being conspicuously displayed.

The TRUSTEES of the late E. ROGERSON, Esq., Didsbury, Manchester (gr. Mr. W. C. Price), showed *Cattleya Wavriniana*, with a very fine spike; *Miltonia Rogersonii*, like a large, pale *M. vexillaria*; *M. Bleuana*; and the small form of *M. vexillaria*, with a very dark base to the lip.

AWARDS.

FIRST-CLASS CERTIFICATE.

Cattleya Rhoda Fairlawn variety (Iris × Hardyana) (see fig. 67), from H. S. GOODSON, Esq., Fairlawn, Putney (gr. Mr. G. E. Day). A very finely-coloured hybrid. Sepals and petals reddish-purple, with a bronzy hue; lip broad and openly-displayed, claret-crimson, with gold lines from the base; column white.

AWARDS OF MERIT.

Lalio-Cattleya Golden Oriole var. tigrina (L.-C. Charlesworthii × C. Dowiana), from Lt.-Col. Sir GEORGE L. HOLFORD, K.C.V.O. (gr. Mr. H. G. Alexander). A very handsome hybrid, with very richly-coloured flowers, six of which were on the one spike. The ground colour is chrome-yellow, the spaces between the veining being dark Indian red. The lip is ruby-crimson with gold veins from the base. The combination of colours and arrangement of the flowers is most attractive.

Cattleya Hardyana Holford's variety, from Lt.-Col. Sir GEORGE L. HOLFORD, K.C.V.O. The broad sepals and petals are rosy-lilac; the labellum, which is reddish-claret colour, being among the darkest in tint of any of this favourite natural hybrid. There is a bright yellow veining at the base of the lip, and yellow patches on either side of the tube.

Cattleya Adula Vale Bridge variety, from Mr. E. V. Low, Vale Bridge, Haywards Heath. A very large flower, the lip especially being unusually broad. The sepals and petals are pale rose-pink on a cream ground; lip magenta-rose.

BOTANICAL CERTIFICATE.

Dendrobium Karoense, from Sir TREVOR LAWRENCE, Bart., K.C.V.O., Burford (gr. Mr. W. H. White). A singular little species from the region of New Guinea, and with features widely separated from *Dendrobium* as generally known, although the flowers seem to agree therewith. The habit of the plants is that of a small *Pleurothallis* or *Stelis*, the single flowers appearing at the apex of the growth and the base of the leaf. The flowers are small, white, the upper sepal narrow, the lower two broad, and arranged beside the lip; petals linear.

CULTURAL COMMENDATION.

To Mr. W. H. White (Orchid grower to Sir TREVOR LAWRENCE, Bart., K.C.V.O.) for a very large specimen of *Platyclinis filiformis*, with a large number of its slender racemes of yellow flowers.

The chairman referred to the great loss which the Orchid Committee had sustained since the last meeting a fortnight ago by the death of two of its members, Mr. H. A. Tracy and Mr. W. Boxall, and also by the death of Mr. Jas. McBean, who, although not a member of the Orchid Committee, was respected by all its members and whose son, Mr. A. A. McBean, was a member of the Committee. A vote of condolence and sympathy with the widows and relatives was passed.

Fruit and Vegetable Committee.

Present: G. Bunyard, Esq. (in the Chair), and Messrs. A. H. Pearson, C. G. A. Nix, W. Poupert, H. S. Rivers, W. Bates, J. Davis, G. Wythes, Owen Thomas, J. Jaques, A. R. Allan, G. Hobday, W. Fyfe, C. Foster, E. Beckett, A. Dean, G. Gibson, and H. Markham.

Mr. STEWART LLOYD, Wychbold Hall Gardens, Droitwich, showed a dish of a useful, medium-sized Kidney Potato named Hale's Early. It was decided to ask Mr. LLOYD to send tubers to Wisley for trial next year.

The Hon. VICARY GIBBS, Aldenham House, Elstree (gr. Mr. E. Beckett), showed shoots of the tall and handsome *Chenopodium amaranticolor*, a coloured, branching Spinach-like vegetable. As plants are growing at Wisley, it was agreed to have some leaves cooked for the Committee to taste on the 9th inst. Mr. BECKETT spoke in high terms of the plant as a vegetable.

Mr. E. DYKE, Melbourne Park, Somerset, sent a dish of an Apple said to be a seedling from Annie Elisabeth. The Committee desired to see fruits again later in the season.

Sir ROBERT HARVEY, Langley Park, Slough, exhibited two fruits of the Mango about the size of large Pears. The flesh was of most delicious flavour. A Cultural Commendation was recommended by the Committee, but the Council afterwards changed the award to a Silver Banksian Medal.

Messrs. S. SPOONER & SONS, The Nurseries, Hounslow, staged a collection of 30 dishes and baskets of Apples, the fruits being remarkably clean and well grown; also a dish of fine Monarch Plums. The cooking Apples included Lord Suffield, Frogmore Prolific, Early Victoria, Castle Major, Golden Spire, Ecklinville Seedling, Domino, Grenadier, Lord Grosvenor, Stirling Castle, Potts's Seedling, Ringer, and Early Rivers, resembling Lord Suffield. The dessert varieties included very fine Lady Sudeley, Williams's Favourite, a conical, red striped fruit; Worcester Pearmain, and Duchess of Gloucester. (Silver-gilt Banksian Medal.)

A batch of medium-sized bunches of Black Hamburg Grapes was shown by C. G. A. NIX, Esq., Tilgate House, Crawley. These had been grown on one rod of 15 feet length, the vine being 15 years planted. The berries were well coloured and finished. (Silver Knightian Medal.)

Mr. G. W. MILLER, Wisbech, staged a number of his richly-coloured Apple Red Victoria, which is fast becoming a popular market variety.

Lord NORTHCLIFFE, Sutton Place, Surrey (gr. Mr. Goatley), showed 18 fine Melons, all well coloured. The largest fruits were those of Universal. There were also good fruits of Hero of Lockinge and the Peer. (Silver Knightian Medal.)

Messrs. JAS. VEITCH & SONS, LTD., King's Road, Chelsea, staged an interesting collection of well-grown and fruited Capsicum plants, which showed, in addition to their edible value, great decorative beauty, especially some of the smaller-fruited ones. The larger-fruited varieties were Mammoth Red, Scarlet Beauty, Early Belle, Chinese, Early Dwarf Red, Long Red, Long Yellow, whilst the smaller ones included Yellow Cherry, Small Round Yellow, the pretty, pointed Cayenne Red, and the very ornamental Little Gem. (Silver Banksian Medal.)

AWARDS OF MERIT

Melon Golden Beauty.—A smooth-skinned variety with very solid, scarlet flesh of pleasant flavour. Grown at Wisley from seeds sent by Messrs. BARR & SONS.

Tomatos Ailsa Craig, Carrick and Ayrshire, all round-fruited and of deep-red colour, with solid flesh. They all proved great croppers when grown under trial at Wisley. From Mr. BALCH, Girvan, N.B.

HORTICULTURAL TRADES ASSOCIATION.

AUGUST 22, 23, 24, 25.—The annual meeting took place in London on these dates, and was one of the most successful, and numerously attended of the series. Nearly a hundred nurserymen and seedsmen from all parts of Great Britain were present. An excursion took place on August 23 to Woking and Wisley. Woking is well known as a centre of the nursery industry, the soil and climate being especially suited to the

culture of Conifers and other shrubs and trees. Messrs. Jackson & Sons and Mr. Charles Slocock, who entertained the party at lunch and tea, have between them some 500 acres of nursery land in the district planted with all kinds of shrubs, trees, Roses, &c. The visit to Wisley Gardens was also much enjoyed, and great interest taken in the trials of various subjects.

The second day was devoted to pleasure, some 90 members joining in a trip up the Thames, landing at Cliveden for lunch (permission having been kindly given by Mr. Astor), and spending the afternoon in enjoyment of the glorious scenery there. Some of the party crossed over to Dropmore to inspect the famous collection of Conifers.

The evenings were devoted to the election of officers for the ensuing year and the discussion of matters of trade interest, such as land taxation and valuation and Gooseberry-mildew. Mr. Peter Veitch (head of the firm of Messrs. R. Veitch & Son, Exeter) was elected president for the coming year.

ABERDEEN ROYAL HORTICULTURAL.

AUGUST 25, 26, 27.—In charming weather, and amid ideal surroundings, in the Duthie Public Park, Aberdeen, the 86th annual show of this admirable organisation was opened by Dr. George Adam Smith, Principal of Aberdeen University. Unfortunately, the weather was unfavourable on the succeeding days, causing a loss on the receipts. It was, however, a splendid display, and one which has never been excelled in the long history of the society. This year the Malcolm Dunn Memorial Medal in Horticulture—a prize given yearly at one of the largest shows in the country—was offered at Aberdeen for the best collection of vegetables. The usual plan of erecting large marquees for the various divisions was again adopted, and all the arrangements were admirably carried out by the secretary, Mr. J. B. Rennett, Advocate, Aberdeen, ably assisted by a large and enthusiastic committee.

PLANTS IN POTS.—Although these were somewhat fewer than usual, the display made was an exceedingly fine one. In the class for a specimen plant in flower, Mr. ALEXANDER BREBNER, Dalhelly Gardens, won the 1st prize with a grand plant of *Disa grandiflora*; Mr. J. LEGGAT, Balgowrie House Gardens, being 2nd, with a fine specimen of *Statice profusa*. Foliage plants, if not numerous, were good. Mr. JOHN ELDER, Norwood Gardens, was the most successful exhibitor. Mr. ELDER and Mr. DOUGLAS, Keppelstone House Gardens, had the best Palms. In Ferns, there was very strong competition. They were mostly *Adiantums*, and Mr. BREBNER, with fine specimens of *Adiantum cuneatum*, A. *Victoriæ*, and A. *gracillimum*, was awarded the 1st prize. The plant of *Adiantum cuneatum* was nearly 5 feet in width, very dense and well grown. *Pelargoniums*, although not quite so good as those shown last year, were very healthy-looking plants, with fine foliage. Mr. J. W. BRECHIN, Ardoe Gardens, Belhelvie, won handsomely. *Fuchsias* were poorly shown, Mr. JOHN YULE, Woodside, having the best plants. *Begonias* and *Petunias* could only be characterised as fair compared with what has been seen at Aberdeen in previous years. Mr. J. D. SMITH, Union Grove, and Mr. BRECHIN, Ardoe, shared the principal honours. In the class for six plants suitable for table decoration, Mr. JOHN PETRIE, Crathes Castle Gardens, won the 1st prize. Mr. GEORGE MAITLAND, Woodside, gained, for the second time, the Society's Challenge Silver Cup offered for the best table of greenhouse plants. It must, however, be won three times, not necessarily in succession, before it becomes an exhibitor's absolute property.

CUT FLOWERS.—A marquee was devoted to these, and they formed the outstanding feature of the exhibition. For 24 Rose blooms, H.P. and H.T., or either, named, distinct varieties, Mr. DOUGLAS, Keppelstone House, had a most meritorious win. Mr. BREBNER, Dalhelly, won the Society's Silver Medal offered for 12 blooms. Mr. ELDER, Norwood, gained a similar award for an exceptionally fine display of Tea or Noisette varieties. Some fine Dahlias were staged by Mr. BRECHIN, Ardoe. This gardener also excelled with Gladioli and Asters. The latter flowers were generally very good, and there was a large entry. Marigolds were good, but much better and more

distinctly-marked specimens have been seen at previous Aberdeen shows. They were of a good depth, however, and Mr. JOHN GRIEVE, Woodside, richly deserved the premier place. The class for a collection of 20 varieties of cut flowers and fine foliage bedding plants, including annuals, arranged on a space 5 feet by 3 feet, proved a delightful feature. Mr. DOUGLAS, Kippstone House, and Mr. W. SCORGIE, Springhill Gardens, won the 1st and 2nd prizes respectively. Mr. BREBNER, Dalheiby, was awarded the 1st prize for 12 cut trusses of Zonal Pelargoniums. In the class for six bunches, trusses or blooms of stove or greenhouse plants, some exquisite Laperias were included, and Mr. ALEXANDER DUNCAN, Rubislaw Den House, gained the 1st prize easily. Orchids included fine specimens of *Miltonia spectabilis*, *Cattleya labiata*, *Cypripedium Lawrenceanum* and *C. Veitchii*. Pansies, both show and fancy, were shown splendidly, as the cool season has suited these flowers. The 1st prize was won by Mr. J. M. DUNN, Nellfield; 2nd, Mr. G. C. MINTY, Hilton. The Violas shown by Mr. JAMES McLENNAN, Elden House Gardens, Banffshire, were much admired, and easily gained the 1st place. Mr. JOHN A. GRIGOR, Seapark, Forres, had the best exhibit of Sweet Peas. In the classes for bouquets, baskets of flowers, sprays, button-holes, and other florists' work, the principal prize-winners were: Mr. J. D. SMITH, Union Grove; Mr. ALEX. CUMMING, Granitehill, and Mr. STRACHAN, Aberdeen Botanic Gardens.

FRUIT CLASSES.—There was a capital display, especially of hardy fruits, an outstanding feature being the fine specimens of Gooseberries. Langley Green, which is considered one of the best dessert varieties in the North, is still a favourite. For the best collection of hardy fruits, six dishes, not more than two dishes of any species, Mr. GRIGOR, Seapark, led. Strawberries were well shown, Mr. JOHN SELBIE, Morken, taking the 1st prize. Mr. PETRIE, Crathes Castle, had the best Cherries and Raspberries. The best Black Currants were shown by Mr. J. FERGUSON, Linton Gardens, Cluny, whilst Mr. W. HARPER, Tulliebelton Gardens, Perthshire, excelled with Red Currants. Grapes proved an exceptionally good display, and Mr. W. CAMPBELL, Brahan Castle Gardens, Ross-shire, had capital wins, both for white and black varieties. The fine finish of his berries took Mr. CAMPBELL far ahead of his opponents. Black Morocco, Black Hamburg, Black Alicante, and Muscat of Alexandria were his leading samples. Melons, Peaches, Nectarines, Apples, Pears, Plums and Tomatos were all well shown, the chief prize-winners for these being Mr. SCORGIE, Springhill; Mr. CAMPBELL, Brahan Castle; Mr. LEGGAT, Balgownie House; Mr. H. B. SMITH, Burdshaugh; Mr. GRIGOR, Seapark, and Mr. JAMES S. BENZIE, Woodside.

VEGETABLES.—It is questionable if finer vegetables have been shown in Aberdeen. For the best collection arranged on a table 4 feet by 3 feet, consisting of 10 kinds, the Malcolm Dunn Memorial Medal in Horticulture was, as already stated, offered. It was worthily won by Mr. WILLIAM HARPER, Tulliebelton, Perthshire. His Cauliflowers, Lyon Leeks, gigantic White Celery, Red Intermediate Carrots, Double Purple Beetroot, Gladstone Peas, Sharpe's Express Potatoes, Canadian Wonder French Beans, and Tomatos were superb. Mr. GRIGOR, Seapark, was a good 2nd, but his produce lacked the fine finish seen in the Tulliebelton collection. He had, however, the best Onions. Salads were well shown, Mr. SCORGIE, Springhill, securing the 1st prize. Mr. JOHN KINNAIRD, Hazlehead, took the premier honours for both Cabbages and Cauliflowers. Cucumbers were exceedingly well shown, Mr. SCORGIE, Springhill, taking 1st place with very good samples. Leeks were best shown by Mr. ELLIS, Raeden Gardens.

Mr. WILLIAM LAWSON, Cornhill; Mr. FERGUSON, Linton, Cluny; and Rev. C. G. MACKENZIE, Methlick, Aberdeenshire, all showed grandly in the classes for Potatoes. Mr. FERGUSON took both the 1st and 2nd prizes for Turnips; whilst Beetroot from Tulliebelton worthily merited the 1st place.

MARKET GARDENERS.—The display made by the market gardens, both fruit and vegetables, was exceedingly good. For the best collection of hardy fruits Mr. KINNAIRD, Burnieboozle, won the 1st prize. Mr. WILLIAM ELLIS, Raeden Gardens, Aberdeen, carried off premier honours for

a collection of vegetables comprising nine varieties.

NURSERYMEN'S CLASSES.—There were fine entries in all sections. Messrs. JAMES COCKER & SON, Rose-growers, Aberdeen, led finely for 36 Rose blooms. Messrs. ADAM & CRAIGMILE, Rubislaw Nurseries, Aberdeen, were placed 1st for 24 Tea or Noisette (or either) Roses with a greatly-admired exhibit. In the decorative classes Mr. ALEX. BURNS, junr., New Market, Aberdeen, and his daughter, Miss ALICE BURNS, Victoria Road, Torry, Aberdeen, won most of the principal prizes.

NON-COMPETITIVE EXHIBITS.—As usual at the Aberdeen Show, these formed a splendid feature. Messrs. BLACKMORE & LANGDON, Twerton Hill Nursery, Bath, showed tuberous-rooted Begonias; Messrs. COCKER, Aberdeen, Roses; Messrs. WILLIAM SMITH & SON, Burnside and Silverhillock Nurseries, Aberdeen, floral devices; Mr. BURNS, junr., New Market, miscellaneous flowers; Messrs. BEN. REID & Co., Pinewood Park Nurseries, Aberdeen, Roses and Sweet Peas; Mr. M. H. SINCLAIR, seedsman, Aberdeen, French produce—peppers, egg fruits, Cantaloupe Melons, Carnations, &c.; and Mr. WILLIAM A. DUNSTAN, Holburn Nurseries, Aberdeen, Dahlias and Chrysanthemums.

ROYAL ENGLISH ARBORICULTURAL.

THE Irish meeting of this Society, briefly noticed in the last issue (see p. 163), was concluded on Saturday, the 20th ult., after a full programme. The annual dinner was held at the Gresham Hotel, Dublin, on August 17, about 60 members being present. The toast of the evening was "The Department of Agriculture and Technical Instruction for Ireland," proposed by Principal J. Smith Hill, B.A., of Aspatia. Mr. T. W. Russell, representing the Department, responded, and portended good times for both agriculture and forestry in Ireland.

The itinerary during the latter part of the week embraced Carton Park, Hamwood Park, and Phoenix Park, including the grounds of the Vice-regal Lodge. In each place, the most interest was evinced in the specimen trees and shrubs rather than forest plantations, and such trees, particularly Coniferous ones, are not often seen in such magnitude on this side of the Channel.

Viscount de Vesci's estate at Abbeylax provided forest plantations in all stages. The estate contains 2,000 acres of woods. Interesting experiments on bog land were inspected. Exceedingly fine Scotch Fir was growing on this unpromising medium. Thuja Lobbii, too (whether planted or accidental seedlings is not known), grow well on the high bog, and at another place this plant had actually beaten Abies Douglasii in a mixed wood in its upward race. Several members favoured this tree for commercial forestry.

Many interesting subjects presented themselves in the gardens and pleasure grounds at Abbeylax, including Quercus Turneri, Q. diversifolia, forms of the Luccombe Oak and a Poplar from the Mississippi name angulata, its foliage being very attractive.

Curraghmore, the extensive property of the Marquis of Waterford, furnished a good day's ramble. Several extensive plantations of pure and mixed wood, extending in dates from the early 'sixties to the present time, afforded most interesting data. Evidence of system and method in all the planting was manifest, the woods being treated in sections of 20 to 30 acres. As in other demesnes visited, the shrubs and ornamental trees were singularly interesting to the visitors from England on account of their luxuriance. To enumerate a few only: Eucryphia pinnatifolia formed a bush 6 feet high covered with its lovely flowers; Grevillea sulphurea was in flower; Garrya Thuretii, 9 feet high and 6 feet through; Pavia macrostachya, Styrax japonica, Escallonia Phillipiana, Andromeda formosa, and, amongst trees, Magnolias (over 50 feet high), Tulip trees, Scarlet Oaks, Catalpas, and Paulownias were growing in perfection; Cryptomeria elegans had, Banyan-like, formed a small forest by depending and throwing up numerous leaders. Other fine trees were Abies Menziesii, 110 feet high; A. Nordmanniana, nearly as tall; Oaks and Beech, with clean, perfect boles 80, 90, and 100 feet tall; Pinus Pineae, the Stone Pine, 45 feet high; and P. Pinaster, on the river bank, a fitting companion to a num-

ber of Scotch Pines, which, at a rough measurement, appear to be 130 feet high.

The Duke of Devonshire's estate at Lismore and Sir John Keane's estates at Cappoquin and Derribean were the last places visited officially. The home nursery, some recent plantings of Abies (Pseudotsuga) Douglasii, older Larch woods, and the home grounds in the former case furnished an interesting morning's work. A Yew avenue, said to be 700 years old, with its arched, natural roof and monster stems, spoke of a long-past tree-planter on the banks of the lovely Blackwater. A fine plant of Calycanthus floridus in the Castle Court completely filled a wall space 35 feet high and 30 feet spread; whilst near by grows a plant of Myrtus Ugni, 15 to 16 feet high. Among other noteworthy subjects may be mentioned a Tulip tree with many stems towering to a height of 90 feet, and near by a Judas tree, 16 feet tall, with a diameter of 20 ft.

At Cappoquin was found an enthusiastic forester, Sir John Keane, whose seat overlooks the winding tidal Blackwater. Here, after tramping through varied woodlands, were encountered huge Ashes, Cedars and Beeches; Cryptomeria elegans, 30 feet; Cordylines, 20 feet; Ozothamnus rosmarinifolius (Helichrysum diosmæfolium), Coronilla, a group of Yuccas in flower, Griselinia littoralis, Pittosporum Mayi, 12 feet high, and Erica arborea were all growing in healthy exuberance. Unofficial visits were also made by individual members to several other interesting collections. The meeting was one of the most successful held by the Society.

NATIONAL VEGETABLE.

AUGUST 30.—A meeting of the committee was held at Vincent Square on Tuesday last. The treasurer (Mr. G. Wythes, V.M.H.), gave a satisfactory statement of accounts. Names of various persons were submitted as judges for the show on the 28th inst., and these will be invited to adjudicate. It was agreed to allot a table space for honorary exhibits of 12 feet run, with a further space not exceeding another 12 feet on the exhibitor's subscription being increased. The various donors of special prizes are to be allotted spaces free of charge. In view of the anticipated great competitions, and the many applications for space already made, such table spaces must be severely limited. A Staging Committee of five members was appointed. It was agreed to invite seeds for a trial of early Cauliflowers now, and later of early Peas, Beet, Spring Onions and early Carrots.

ROTHESAY HORTICULTURAL.

AUGUST 25.—The annual exhibition was held on this date and proved a record show. The entries in the Horticultural Section showed an increase of 81 over last year, but there were fewer nurserymen's exhibits than usual. The John Reid Challenge Cup and Medal, offered for the most successful competitor in the cut flower classes, was won easily by Mr. D. I. MORRIS. Mr. M. CUTHBERTSON was again successful in winning the 1st prize for a table of hardy herbaceous flowers, and Messrs. A. LISTER & SONS were placed 1st for Dahlias, Pansies and Roses. Other successful exhibitors were:—Mr. DAVIDSON, Arden Craig, for greenhouse plants and Grapes; Mr. D. PENNEY, Glenburn, for a magnificent group of pot plants, which was one of the features of the show, also for Carnations; Mr. S. THORBURN, Kyles Hydro, for Chrysanthemums, Pompon Dahlias, and pot plants; and Mr. JOHN CAMPBELL, Lochfyne, for Asters, French Marigolds, and culinary Apples.

Among non-competitive exhibits, Messrs. DOBBIE & Co. made a fine display of Sweet Peas and Begonias; Messrs. DOBBIE, STEWART & Co., Chapelhill Nursery, showed a fine group of Pelargoniums, Gladioli, Chrysanthemums, Sweet Peas, and other flowers; and Messrs. A. LISTER & SONS, Meadow Bank Nurseries, arranged many well-executed floral devices.

GARDENING APPOINTMENTS.

Mr. W. F. STEWART, for the past 6½ years Kitchen Garden and Hardy Fruit Foreman at Mentmore, Leighton Buzzard, Bucks., and previously Inside Foreman at Dunkeld, N.B., as Gardener to the Baroness von Schröder, The Rookery, Nantwich.

Mr. CHARLES FORD, as Gardener to Lt.-General Hon. SOMERSET J. GOUGH-CALTHORPE, K.C.B., Perry Hall, Perry Barr, Birmingham.

LAW NOTE.

FRUIT PICKING IN PAILS.

An interesting case regarding the net weight of pails used in fruit picking came before a Justice of the Peace Court, held at Perth, on August 25, when a partner of a firm of farmers and fruit-growers at Blairgowrie was charged with having on August 2, by the hands of an assistant, wilfully defrauded the berry-pickers on one of the firm's fields by having in use pails for which 4 lbs. were deducted in the weighing of the berries, but which were found to be deficient in weight. The accused pleaded not guilty. From the evidence it appeared that a surprise visit was paid to the field by an inspector of weights, when 53 pails were weighed and all found to be deficient in the asserted weight, some of them as much 1 lb. The defence was to the effect that the pickers had accepted a rule by which the weight of the pails was to be taken as 4 lbs., although they were admittedly less than that, this rule being adopted, as the soil of the field frequently adhered to the pail and thus added to the weight. The charge was found proved, but, under the circumstances, the modified penalty of £1, with costs amounting to £1 16s. 6d., was imposed. The decision is one of importance, as the practice has been in operation for some time in the district, and has been frequently followed without any intention to reduce the pay of the pickers.

DEBATING SOCIETIES.

READING AND DISTRICT GARDENERS' ASSOCIATION.—More than 100 of the members paid an evening visit to Park Place, Henley-on-Thames, on August 16. The visitors were met at Shiplake Station by Mr. T. J. Powell, the head gardener, who conducted them through the Bolney Court Estate to the river, over which they were ferried. Immediately on arrival tea was provided by Mrs. Noble, and afterwards the gardens and grounds were inspected.

BATH GARDENERS'.—The usual monthly meeting of this society was held on Monday, August 22, at the Foresters' Hall, Bath; Mr. J. Parrott presided. A paper on "Vegetables for Exhibition" was read by Mr. H. Spary. The lecturer in his opening remarks alluded to the marked improvements that had been made in horticulture during the past 30 years.

WATFORD AMATEURS' AND GARDENERS'.—The 18th monthly meeting of the above society was held at the St. Andrew's School, on Friday, the 12th ult.; Mr. Hardenberg occupied the chair. A paper was read by Mr. A. Stone dealing with the "Formation and Treatment of Rock Gardens." The paper gave rise to a lengthy discussion. Mr. F. E. Newman exhibited on the lantern screen a collection of slides, made by himself, of Alpines and rock plants generally.

BRISTOL AND DISTRICT GARDENERS'.—A well-attended meeting was held on August 25, at St. John's Parish Rooms. Mr. Hayball occupied the chair. A paper on "Melons" was read by Mr. Wilkinson, gardener to Col. Gibbs, M.P., Tyntesfield. The lecturer said plenty of heat is required to grow Melons successfully, a night temperature of from 65° to 70° being the minimum. Mr. Wilkinson advised the use of a good stiff loam, placed as a ridge 10 inches in depth and 14 inches wide. The cordon system is the best method of training, allowing a space of 18 inches between the plants, and not more than two fruits on each. Mr. Wilkinson has produced fruits weighing 9½ lbs. each by this system. When the fruits are of the size of Walnuts, feeding should be commenced, but manure is not necessary when the Melons show signs of the skin netting. Three new members were elected. Mr. Morse was awarded the 1st prize offered for two plants of Begonias.

THE WEATHER.

THE WEATHER IN WEST HERTS.

Week ending August 31.

A cold, wet, dull and windy week. During the past week the days remained persistently cold. The nights also, with two exceptions, have been below the average in temperature. The ground temperatures have fallen, and are now 1° colder at 2 feet deep, and 2° colder at 1 foot deep, than are seasonable. On both the 28th and 29th, half-an-inch of rain was deposited. Rain has fallen on all but two days of the last fortnight, and to the aggregate depth of 2 inches. During the last six days 3½ gallons of rainwater have come through the bare soil gauge, and on one day a little came through the gauge on which short grass is growing. The sun shone on an average for 4 hours a day, which is 1½ hours a day short of the average duration at this period in August. The winds have been as a rule high, but in no hour did the mean velocity exceed 16 miles—direction W.S.W. The average amount of moisture in the air at 3 p.m. exceeded a season quantity for that hour by as much as 12 per cent. E. M., Berkhamsted, August 31, 1910.

SCHEDULE RECEIVED.

Weston-super-Mare and District Chrysanthemum Society's 24th exhibition and floral display will be held on Thursday, November 10, in the Knightstone Pavilion. Secretary, Mr. J. Lee, 7, Victoria Buildings, Weston-super-Mare.

MARKETS.

COVENT GARDEN, August 31.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in one day.—EDS.]

Cut Flowers, &c.: Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Asters (Chinese), per dz. bunches	1 6-3 0	Lilium lancifolium album	1 0-1 6
Carnations, p. doz. blooms, best American varieties	0 9-2 0	Lily of the Valley, p. dz. bunches extra quality	6 0-9 0
—smaller, per doz. bunches	6 0—	Marguerites, p. dz. bunches white	2 0-3 0
—Carola, special	2 0-2 6	—yellow	1 0-2 0
—second size	1 0-1 6	Odontoglossum crispum, per dozen blooms	2 6-3 0
Centaurea cyanus, per dz. bunches	0 9-1 0	Pelargoniums, show, per doz. bunches	3 0-4 0
—suaveolens, per dozen bunches	3 0-4 0	—Zonal, double scarlet	3 0-4 0
Chrysanthemums, per dz. bunches	6 0-9 0	Poppies, Iceland, pr. dz. bunches	1 0-2 0
—larger per doz. blooms	1 6-2 0	Roses, 12 blooms, Niphetos	0 9-1 6
Coreopsis, p. doz. bunches	1 6—	—Bridesmaid	0 9-1 0
Coronflowers, white and pink	1 6-2 0	—C. Testout	0 9-1 6
Dahlias, per dozen bunches	3 0-4 0	—Kaiserin A. Victoria	1 0-1 6
Delphiniums, per dozen spikes	3 0-5 0	—C. Mermet	1 0-1 6
Gardenias, pr. doz.	1 6-2 0	—Liberty	1 0-1 6
Gladioli, hybrids, per doz. spikes	2 0-3 0	—Mme Chateau	0 9-1 6
Gypsophila paniculata, per dz. bunches	4 0-5 0	—Richmond	1 0-1 6
—double	6 0-9 0	—The Bride	1 0-2 0
Lapagerias, white, per dozen	1 6-2 0	—Vanux H.P.'s	0 6-1 0
Lilium auratum, per bunch	1 6-2 6	Scabious, per doz. bunches	3 0-4 0
Lilium lancifolium rubrum	1 0-1 6	Statice, per doz. bunches	3 0-4 0
		Stocks, per dozen bunches	2 0-3 0
		Sweet Peas, per dozen bunches	0 9-1 0
		Tuberose, p. cross	3 0-4 0
		—per doz. blooms	0 4-0 5

Cut Foliage, &c.: Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Adiantum cuneatum, doz. bchs	4 0-6 0	Ivy leaves, bronze	2 0-2 6
Asparagus plumosus, long trails, per doz.	3 0-6 0	—long trails per bunch	1 0-1 6
—medium, doz. bunches	12 0-15 0	—short green, per dozen bunches	1 0-2 0
—Sprengeri	6 0-9 0	Moss, per gross	4 0-5 0
Croton leaves, per dozen bunches	9 0-12 0	Myrtle, dz. bchs. (English), small-leaved	4 0-6 0
Ferns, per dozen bchs. (English)	3 0—	—French	1 0-1 6
—(French)	4 0—	Physalis, per doz. bunches	3 0-4 0
Hardy foliage (various), per dozen bunches	3 0-5 0	Sorrel, per dozen trails	2 0-3 0

Plants in Pots, &c.: Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Aralia Sieboldii, p. dozen	4 0-6 0	Ferns in 48's, per dozen	4 0-6 0
—larger specimens	9 0-12 0	—choicer sorts	8 0-12 0
—Moseri	6 0-8 0	—in 32's, per doz.	10 0-18 0
—larger plants	12 0-18 0	Ficus elastica, per dozen	8 0-12 0
Araucaria excelsa, per dozen	12 0-30 0	—repens, per dz.	4 0-10 0
—large plants, each	3 6-5 0	Grevilleas, per dozen	3 0-5 0
Aspidistras, p. dz., green	15 0-24 0	Isolepis, per dozen	3 0-4 0
—variegated	30 0-42 0	Kentia Belmoreana, per dozen	18 0-24 0
Asparagus plumosus nanus, per dozen	9 0-12 0	—Fosteriana, per dozen	18 0-30 0
—Sprengeri	9 0-12 0	Kochia scoparia, per dozen	4 0-6 0
Asters (Chinese), per doz. pots	8 0-4 0	Latania litoronica, per dozen	15 0-21 0
Campanulas, per dozen	5 0-6 0	Lilium longiflorum, per dz.	12 0-15 0
Chrysanthemums from the open, per dozen	4 0-6 0	—lancifolium, p. dozen	9 0-10 0
—in pots	9 0-12 0	—martagon per dozen	8 0-10 0
Cocos Weddelliana, per dozen	18 0-30 0	Marguerites, white, per dozen	3 0-5 0
Crotons, per dozen	9 0-12 0	Pelargoniums (show), per doz.	5 0-6 0
Cyperus alternifolius, per doz.	4 0-5 0	—Ivy leaved, per dozen	4 0-6 0
—laxus, per doz.	4 0-5 0	—Zonal	3 0-4 0
Euonymus, per dz., in pots	3 0-8 0	Selaginella, per dozen	4 0-6 0
—from the ground	3 0-6 0	Solanums, per dozen	6 0-8 0
Ferns, in thumbs, per 100	8 0-12 0	Spireas (pink)	9 0-12 0
—in small and large 60's	12 0-20 0		

Fruit: Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Apples (English): Golden Spier, bushel	4 0-4 6	Melons (Guernsey)	1 0-2 6
—Bramley's Seedling	4 0-5 0	—(French), Cantaloupe, each	2 6-5 0
—Worcesters, ½ bushel	2 9-3 6	—(Spanish), yellow, per case, 24's	6 0-7 6
—Dorset, bushel	4 0-5 0	—36's	9 0-10 6
—Grosvener, bushel	2 6-3 0	—Spanish Bronze (24's)	8 0-8 6
—Keswick Codlin	3 0-3 6	—extra large	10 0—
—Beauty of Bath	4 0-5 0	—Water	14 0-16 0
—Ecklinville, p. bushel	3 0-4 0	Nectarines, dozen: —selected	6 0-12 0
—Lady Sudeley, ½ bushel	4 0-5 0	—seconds	2 0-4 0
Bananas, bunch: Doubles	10 0—	Nuts, Almonds, p. bag	36 0-42 0
—No. 1	9 0—	—Brazil, new, per cwt.	48 0—
—Extra	10 0—	—sorted	55 0—
—Giant	12 0-14 0	—Barcelona, per bag	32 0-34 0
—Red coloured	4 0-5 6	—Cocoa nuts, 100	10 0-14 0
—Red Doubles	8 0-9 0	—Walnuts, pickling, per bushel	7 0—
—Loose, p. doz.	0 6-1 0	Oranges: —Cape seedless, per case	12 0-14 0
Blackberries, peck	2 6-3 0	—Naples	9 6-20 0
Figs, per dozen	2 6-6 0	—Jamaica	17 0-18 0
Grape Fruit, case: 96's	20 0—	Peaches (English), per doz.	6 0-15 0
—80's	20 0—	—seconds	3 0-6 0
—64's	20 0—	Pears (Californian), per case	9 0-9 6
—54's	20 0—	—(French), cases	3 0-3 6
Grapes (English), per lb.: Alicante	0 10-1 0	—(French), crate: 36's	3 3-3 6
—Madresfield Court	1 0-1 6	—48's	2 9-3 3
—Muscats	1 3-2 6	—64's	6 6-7 6
—Canon Hall	2 6-4 0	—72's	6 6-7 6
—Hambro	0 6-1 0	—90's	5 6-6 0
—Colmar	1 3-1 6	—(English), He-sele, bushel	5 0-6 0
—Belgian Hambro	0 9-1 0	—Jargonelle	7 0-8 0
—Guernsey Alicante	0 6-0 8	—Dr. Jules Guyot bushel	8 0-8 6
—Lisbon Sweet-water, per case	9 0-11 0	Pineapples, each: —(Florida), per case, 30, 36	16 6-20 0
—clusters	8 0-10 0	Plums (English), ½ bushel: —Victoria	4 0-4 6
—Almerias Tinted, barrel	9 0-10 0	—Washingtons	4 0—
Greengages (Spanish & French), per box	0 9-1 1	—Diamonds	4 0-4 6
—per ½ sieve	8 6-12 0	—Per-hore Egg 28 lbs. to ½ bushel	3 0-3 6
—(French), dessert, ½ bushel	7 6-8 6	—Damas (Kent), ½ bushel	3 6—
—cooking	5 0-6 6	—(Berkshire)	4 0-4 6
—per round	3 0-3 3	—(French), Royals, per ½ sieve	6 0-8 0
—(English), ½ bushel	7 0-8 0	—Blue	3 6-4 6
Lemons: —Messina (150)	6 0-6 6	—(Californian), Wickson, case	9 6-10 6
—Naples (420)	15 0—	Tangerines (Naarjes), per box	1 6-4 0
—selected	10 0—		
—Murcia (30)	10 6—		
—large	12 0—		
Mangoes (Jamaica), dozen	3 0-6 0		
Melons (English)	1 6-3 0		

Vegetables: Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Artichokes (Globe), per dozen	1 6-2 0	Marrows, per tally	2 6-3 6
Aubergines, doz.	1 6-2 0	—per box	1 6-2 0
Beans, Broad (French), per pad	2 6-3 6	Mini, per doz. bun.	2 0—
—per packet	0 4-0 6	Mushrooms, p. lb.	1 2-1 6
—Scarlet Runners, p. bushel	0 9-1 6	—broilers	1 0—
Beetroot, bushel	1 6-2 6	Mustard and Cress, per dozen pun.	0 6-0 8
Cabbages, tally	2 0-3 0	Onions (spring), dz. bunches	2 0-3 0
Carrots (English), dozen bunches cwt.	0 9-1 3	—Dutch	3 6-3 0
—(French), per dozen bunches	4 0-5 0	—New Spantish, case	4 0-5 6
Cauliflowers, hamper (24-30)	4 0—	—Schallots, lb.	0 1½—
—per doz. (large)	4 0—	Parsley, pr. doz.	2 0-3 0
Celery, per dozen	2 0—	Peas (French), per pad	4 6-5 0
Cucumbers, per flat	5 0—	—Kents, per bushel	2 6-3 6
Endive, per dozen	0 6-0 9	—bags	2 0-2 6
Herbs (sweet), packets, per gross	7 0—	Radishes (Eng.), p. doz. bunches	1 0-1 6
Horseradish, foreign, new, per bundle	1 6-2 0	Stachys tuberosa, per lb.	0 4-0 5
—12 bundles	18 0-24 0	Tomatoes: —(English), per dozen lbs.	8 0-3 6
Lettuce (English), per bushel	0 9-1 6	—small selected	3 0—
—hamper	2 0-3 0	—seconds	1 0-1 6
—Cos, per dozen	1 0—	—(Guernsey), per dozen lbs.	2 9-3 6
—(French), Cos, per dozen	1 6-2 0	—(French), crate	3 0-3 6
		Turnips, 12 bchs.	2 0—
		—(French)	4 0-5 0
		Watercress, p. dz. bunches	0 6-0 6½

REMARKS.—A consignment of Mangoes arrived from Jamaica last week, and met with a small demand. English Peaches and Nectarines of best selected varieties are a shortage. English Apples are a poor trade and the market is well supplied with them; Worcester Pearman is especially abundant. Grapes are a poor demand and very plentiful. Foreign Gages are numerous and a fair trade. Both English and Foreign Plums are a poor trade. Scarlet Runners are a plentiful supply and cheap. Peas are a bad trade. Prices for Tomatoes are firmer. Trade both in vegetables and fruits is quiet. E. H. R., Covent Garden, August 31, 1910.

New Potatoes.

	per cwt.		per cwt.
Kents—	s. d.	Bedfords—	s. d. s. d.
British Queen	3 3-3 9	Epicure	2 6-2 9
Sharpe's Express	3 3-3 9	May Queen	2 6-3 0
Eclipse	3 0-3 3	Lincolns—	
Epicure	2 6-8 0	Sharpe's Express	3 0-3 3
May Queen	3 0-3 3	Epicure	2 9-3 0
Bedfords—		Blacklands	2 3-2 6
Eclipse	2 9-3 0		

Edward J. Newborn, Covent Garden and St. Pancras,
August 31, 1910.

COVENT GARDEN FLOWER MARKET.

The flower market presents a dull appearance. There is but little trade for pot plants, and cut flowers do not sell readily. We are reminded of the approach of autumn by seeing plants of *Solanum capsicastrum* with well-ripened berries. Chrysanthemums in pots are very good. Some plants are taken up from the ground, but those grown in pots are the best, as they last much longer. Some growers lift and pot them when the flowers are in the bud stage; these become re-established before the flowers open. Varieties of the Marie Massie type are of the most service for early blooming. Madame Desgrange is another that is useful for early flowering. Some good Lilliums of various sorts are procurable, but there is little demand for them. Plants of *Campanula isophylla*, both white and blue varieties, are well flowered. Pelargoniums are practically over for the season; a few Zonals are seen, but they are not in demand. Foliage plants are well supplied, and those who can, will do well to buy early for winter use, for prices are now low and supplies are plentiful. There will also be less risk of damage from cold than there will be later on. It is the same with Azaleas: if these are subjected to a slight frost the buds do not open well; also other autumn and winter-flowering plants and even Chrysanthemums suffer from a slight frost when they are in bud, especially after showery weather. Hardy shrubs will soon be in demand; some growers are already sending *Euonymus* and various Conifers to the market.

CUT FLOWERS.

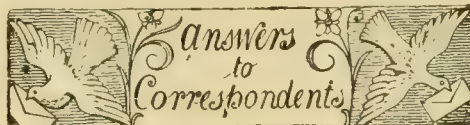
Hardy flowers are the most prominent feature. Asters are seen in large quantities: their prices vary considerably. White, pink and purple are most in demand. Roses from the open are a great feature. Those who grow specially for market cut their blooms with long stems, but even the best blooms with clean foliage are sold very cheaply. Dahlias are seen in large quantities. Gladioli are plentiful; the Scarlet *brenchleyensis* is most in demand. Sweet Peas are nearly over for the season. Lilliums are well supplied, and their prices are below the average. Carnations vary considerably in quality, and the best do not command very good prices.

For the next few weeks trade will be very uncertain, and prices may fluctuate considerably. A. H., Covent Garden August 31, 1910.

Obituary.

WILLIAM BOXALL.—The death of this well-known Orchidist occurred on Sunday, August 23, at his home, 186, Brooke Road, Clapton, in his 66th year. His health had been failing for some years, the trouble being diabetes, and about three years since he had a paralytic stroke from which he only partially recovered. Notwithstanding these infirmities, he was a regular attendant at the meetings of the Royal Horticultural Society, and was a member of the Orchid Committee for many years. He was one of the first to receive the Victoria Medal of Honour in Horticulture. The late Mr. Boxall was a great lover of all plants, but Orchids were his favourites, and he travelled over many parts of the world in search of them. In the early 'sixties he was employed in the firms of Messrs. Hugh Low & Co., Clapton, and Messrs. James Veitch & Sons, Chelsea, also in the gardens of Leigh Park, Havant, and Earl Radnor's garden at Highwood, under the late Mr. Henry Eckford. Later, he was employed as foreman of the Orchid department in Messrs. Hugh Low & Co.'s Nurseries. He was sent by the firm to Burma, where he soon seemed as much at home as in England, and was not long before he forged ahead to the borders of China, being the first to send home the now world-famous *Dendrobium Wardiana Lowianum*. Some of these plants sold in Messrs. Steven's sale room for as much as 100 guineas each. *Cymbidium Lowianum* was one of his special finds. *Cypripedium Boxallii*, *Dendrobium Boxallii*, and *Vanda Boxallii* will serve to perpetuate his name. He subsequently went to the Philippines, and sent home, in specially-prepared cases, glazed with ground oyster shells, large quantities of *Phalæopsis amabile* and *P. Schilleriana*, the difficulties of transit being far greater than they are now. Borneo, Java, Brazil, Central and South America were all traversed by him, and many are the tales he told of things seen and heard in those countries. He was a most entertaining conversationalist, and nothing de-

lighted him more than to gather around him the children of his friends, amongst whom he was ever welcome. He was married in August, 1874, to Miss Evans, of Cheltenham, who survives him. He leaves no family, his only child, a daughter, having died in infancy.



A GARDENER'S NOTICE: A. W. M. It is customary for a head gardener to receive and give a month's notice before terminating an engagement, notwithstanding that the wages are paid weekly. In the case of under-gardeners, a week's notice is usual.

AMERICAN FRUIT JOURNAL: *Subscriber, Ware.* We do not know the publication you refer to.

APPLE SHOOTS DISEASED: *Anxious One.* The trouble is due to canker (*Nectria ditissima*). This disease obtains an entry through a wound, and often follows attacks of American blight. Some varieties of Apple, such as King of the Pippins, are more susceptible to the disease than others. Cut out and burn the diseased



THE LATE WILLIAM BOXALL.

branches. In slight attacks, cut out the affected parts and cover the wound over with tar. Take out badly-cankered and valueless trees from the ground, else they will become a source of infection for others.

APPLE TREES: *Winkfield.* There is a "sooty" fungus, *Cladosporium*, growing on the under-surface of the Apple leaves over the brown places, but it is probable that this came after the injury was caused. The leaves of Apple trees frequently turn brown at the edges in wet seasons, in the case of those varieties not suited to the soil or locality. In some cases it indicates a lack of potash in the soil.

ASTERS: *C. Bros.* There are no signs of any insect or fungus attack on the Aster leaves sent. If the trouble continues, send us further leaves, packed in a small tin or wooden box.

AVOCADO PEAR AND ORANGE TREES: *Avocata.* The plant you refer to is the Avocado Pear (*Persea gratissima*), a native of Tropical America, and cultivated largely in that and other countries for the sake of its fruits, which contain about 8 per cent. of oil. It is doubtful if the plant will withstand the cold of winter in a living room. Your best plan is to get a friend who possesses a warm greenhouse to house it for you during the winter months. With ordinary care, in a warm greenhouse, this plant will quickly assume the dimensions of a small tree. It thrives in any ordinary soil, and delights in full exposure to all the sun possible in this country. Very little pruning is required unless you wish to keep the plant to a small size. Orange plants will thrive

in an ordinary window, as they are much harder than the Avocado Pear. You should remove the glass from the top of the pot at once, as it is quite unnecessary. It is best to place Oranges outdoors during the summer months, in order to well ripen the growths. As you have raised them successfully from seeds, you should have no further difficulty in their culture.

COCOANUT GERMINATING: *S. B.* It is not unusual to find, at this season, cocoanuts containing the germinating embryo.

CUTTINGS OF TEA ROSES: *Anxious.* Short, stubby, flowering shoots, taken off with a heel of the old wood attached, should now strike freely if inserted in sandy soil under hand lights outside. The cuttings, when inserted, should be well watered and shaded from strong sunlight. As a makeshift, a square, wooden box, with the bottom knocked out, and covered with a sheet of glass would answer the purpose, and, in this case, it would not be necessary to stand them under a north wall, as shading would be unnecessary. Further information on rooting Rose cuttings is given on p. 178. The Pillar Roses should be re-potted at once, and the old flowering wood cut away. If, however, the trees have not made much growth, the old wood should be pruned less severely.

GROWTH ON ROSE: *Jas. W.* The outgrowth is a gall caused by *Rhodites roseæ*. The galls are popularly known as "Robin's Pincushion," "Moss galls," "Bedeguar galls," &c. They appear to grow from a twig or stem, but this is apparent only. They originate from a leaf.

NAMES OF FRUITS: *A. Herbert.* Pear Citron des Carmes.—*R. M. Lamb.* The small fruit is Fearn's Pippin, the large one Minchul Crab.—*H. Henderson.* The small Apple was decayed. We cannot undertake to name unsound specimens. The other Apple is Peasgood's Nonesuch, the Nectarine Elruge, and the Pear Clapp's Favourite.—*F. C.* Please state if the Peach and Nectarine have small or large flowers, and also the shape of the glands, and whether the trees are grown under glass.

NAMES OF PLANTS: *W. E. E. R.* 1, *Eupatorium ageratoides*; 2, *Rudbeckia speciosa*; 3, *Cunninghamia sinensis*; 4, *Helianthus multiflorus* fl. pl.; 5, *Helianthus giganteus*; 6, *Veronica longifolia*; 7, *Rudbeckia laciniata* fl. pl.—*E. Perkins.* 1, *Helianthus multiflorus*; 2, *Rudbeckia speciosa*; 3, *Spiræa Menziesii*; 4, *Inula helenium*; 5 and 6, garden varieties of *Phlox decussata*.—*H. Child.* 1, *Polygonum sachalinense*; 2, *P. cuspidatum*; 3, *Poterium canadense*; 4, *Spiræa japonica alba*; 5, *Lysimachia punctata*.—*A. T.* 1, *Abies nobilis*; 2, *Taxus baccata*; 3, *Hypericum quadrangulum*; 4, *Solidago virgaurea*; 5, *Hypericum androsæmum*; 6, *Galeopsis Tetrahit*; 7, *Stachys betonica*; 8, *Crepis virens*; 9, *Hieracium umbellatum*; 10, *Polypodium vulgare*.—*C. Dean.* 1, *Senecio tanguticus*; 2, *Bocconia cordata*; 3, *Helenium autumnale cupreum*; 4, *Polygonum amplexicaule*; 5, *Thalictrum flavum*; 6, *Galega officinalis alba*; 7, *Solidago ulmifolia*; 8, *Veronica longifolia*; 9, *Monarda didyma*.—*G. J.* *Cichorium Intybus*, common Chicory.—*W. H. S.* *Eria convallarioides*.—*Scot.* The flower you send is of *Cypripedium Stonei*. The other plant which came with it may be *Cypripedium Lowii*, as they are often found together.—*R. T.* 1, *Dendrobium secundum*; 2, *Masdevallia calura*; 3, *Restrepia antennifera*; 4, *Aërides cylindricum*; 5, *Cypripedium purpuratum*; 6, *Brassia maculata*.—*A. G. M.* 1, *Hæmanthus natalensis*; 2, *Coprosma Baueriana variegata*; 3, *Sparmannia africana*; 4, *Aloe variegata* (Partridge-breast Aloe); 5, *Metrosideros floribunda*; 6, *Begonia argyrostigma*.—*D. S., Ireland.* 1, *Malcolmia maritima* (Virginian Stock); 2, *Mimulus cardinalis*.—*Alpha.* 1, *Davallia fijiensis*; 2, *Polypodium nigrescens*.—*R. L., Southampton.* 1, *Hedychium Gardnerianum*; 2, *Tecoma (Bignonia) radicans*.—*H. H., Penarth.* *Æschynanthus Lobbianus*.—*A. B. C.* *Chlorophytum elatum variegatum*.—*A. C. H.* A very good variety of *Odontoglossum Harryanum*.

Communications Received.—*M. Powell*—H. S.—Kesteven—H. G. I.—G. T.—T. C.—Muscat, Middlewich—E. R. F., Rothsay—Anxious, Uttoxeter—Muscat—G. W.—J. C.—Anxious, Donegal—P. H.—G. M. T.—H. S. T.—A. G. B.—E. M.—M. G. V. L.—J. H.—J. M.—J. D.—W. T., Bath—T. L.—A. C. & Sons, Ltd.—A. J.—W. E. G.—C. J. E.—F. J.—W. E. B.—C. D.—Sittingbourne—J. H.—G. G.—R. F. W.—G. M. T., Dalkeith.



SOBRALIA MACRANTHA ALBA, AS GROWN BY SIR JOHN EDWARDS-MOSS, BART.

THE Gardeners' Chronicle

No. 1,237.—SATURDAY, September 10, 1910.

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AUGUST FRUIT NOTES.

MORE FINANCIAL DETAILS.

ON August the 6th some statements as to the improved prices of certain kinds of fruit were given and compared with those of 1909. It is gratifying to be able to add that the price of Plums kept up well to the end of August, and that there is every reason to expect still higher rates for the very scanty supplies of late varieties. There is much comfort in the thought that growers can get partial compensation for scanty crops of fruit, in spite of foreign competition, and I have taken the trouble to extract from my delivery books the prices returned by salesmen for three varieties of Plums in three seasons. Early Prolific made 2s. 6d. to 3s. net per half-sieve of 28lb. in 1908, 1s. 6d. to 4s. in 1909, and 4s. 6d. to 6s. 6d. in 1910. Czar sold at 2s. 3d. to 3s. in 1908, 3s. to 4s. 6d. in 1909, and 4s. 6d. to 5s. in 1910. Victoria made 1s. 9d. to 2s. in the first year named, 2s. 6d. to 3s. 6d. in the second, and 5s. to 6s. in the third. As a rule, the greatest quantities were sold at the lowest price quoted, or at a rate nearer to the lowest than to the highest, though this does not apply to Prolific, which usually sell well. There was commission, as well as rail carriage, to deduct; but this makes no difference to the comparison, except that high prices bear these burdens better than low ones. The greatest proportion of compensation for a short crop was in relation to Victorias, which are usually very cheap after they are in full supply, with Pershore Egg Plums to glut the markets. In 1909, my crop of Victoria amounted to 302 half-sieves, which realised £39 12s. 6d. free of

commission, but not of rail carriage. The average was 2s. 7½d. per half-sieve. In 1910 less than half as good a crop, or 140 half-sieves and one peck realised £35 7s. 5d., averaging 5s. 0½d. per half-sieve. As my late varieties, Pond's Seedling and Monarch, almost always make high or fair prices, the comparison is not likely to be as remarkable for them as it is for Victorias. Nor was it so for early sorts.

Apples have not at present made any approach to the extra prices necessary to afford any substantial portion of compensation for the shortness of the crop. Dessert varieties alone have sold remarkably well, and as they usually make somewhat high rates the increases this season are only about 6d. per half-sieve compared with those of 1909, and 1s. compared with those of 1908. Culinary Apples have gone down in price considerably since last month's article was written, the bulk of them having made in the latter part of August only 2s. to 2s. 9d. for firsts, with 3s. for extra large and good fruit, and 1s. 3d. to 1s. 6d. for seconds. These prices are no better than those of last season for the corresponding period, though much higher than the extremely low rates of 1908. The dullness of the market for cooking Apples is due, not to large supplies, but to a very slack demand. Consumers have not been satiated with cheap mid-season plums, as they usually have been by the end of August, and they have not yet shown a disposition to buy Apples freely. Moreover, it happens that the best crops of Apples are those of early varieties, besides which many growers have been "slaughtering" their crops of late keepers, such as Lane's Prince Albert and Bismarck, which should be left on the trees for weeks to come. That English cooking Apples will be a very scanty supply in October may be regarded as a certainty, and growers may be recommended with confidence to keep their late varieties at least so long.

BIRDS AND FRUIT.

Never in my experience have birds been more troublesome in pecking Apples and Plums than they have been during the past month. To keep Gladstone and Beauty of Bath Apples from very extensive damage, it was necessary for someone to go among them with a gun about once an hour every day. There has been the same trouble with Victoria Plums, although these were gathered before they were ripe. On several occasions, I have scared fifty or sixty blackbirds out of a plantation of only a little over three-quarters of an acre in one field, while the fruits of young trees in a more distant field were gathered when barely coloured because the birds had begun to attack them. Blackbirds have been the chief, if not the only offenders. Thrushes in my case have not been found pecking either Apples or Plums. There have been smaller birds on the trees; but whether for the fruit or not has not been clear. If I had the power of exterminating blackbirds, which are the greatest depredators among Black and Red Currants, ripe Gooseberries, and Cherries, as well as among Apples and Plums, I should have no hesitation in doing so. Starlings are about as bad delinquents among Cherries, but not in the case of any other fruit, and they are such valuable insectivorous birds that they receive complete mercy at my hands. Thrushes are gluttons for Strawberries and Raspberries,

but these crops are not grown by me for the market. Now that all ripe dessert Apples have been gathered, culinary varieties are receiving attention from blackbirds, and some varieties have been gathered sooner than they otherwise would have been to save them from damage.

THE COLOURING OF APPLES.

Results in the present season confirm the opinion of many growers that rainy weather promotes the colouring of Apples, as it is seldom that there has been more brilliance in such varieties as Worcester Pearmain, Queen, and Bismarck than there is this season. But growing Apples in grass has the greatest of all effects in promoting colouring. When my oldest plantation became mature, and all bushes had been grubbed up, the grass was allowed to grow, mainly because the land is such an inveterate grass-grower that it could not be kept clean in a rainy season by any practicable amount of hoeing. The grass is mown twice in the season, and used as a mulch, on the American system, with cow or London manure in addition. Fruits of Domino, not yet gathered, are of a bright yellow colour, tinged with red where the sun shines on the fruit; whereas, in a young plantation of arable land, the same variety is green and reddish brown. Similarly, Allington Pippin on the grass is of a brilliant crimson colour, and only tinged with a comparatively dull red on the arable land. There is the same difference in the cases of Worcester Pearmain, Lane's Prince Albert and a few other varieties grown in both fields. The fruit is much larger on the arable than on the grass land, but that is at least partly owing to the former trees being several years younger than the latter and to their bearing only light crops. Still, I think that growing Apples in grass tends to reduce the size, while promoting the colouring of the fruit. Such strong-growing varieties as Bramley's Seedling, Warner's King, Queen, and Royal Jubilee produce very fine Apples, however, on grass land, while Allington Pippin and Worcester Pearmain do not take kindly to the change from arable land.

SCAB INCREASING.

This season's experience convinces me of the advantage of the American system of spraying against scab up to nearly the time of gathering Apples. Varieties badly affected have grown more and more scabby as they ripened, although the trees were sprayed once just before the buds burst, and twice after the blossom fell. It would be a serious increase of labour and expense to spray twice more at intervals, but probably it would pay well, and it will be tried at least on a small scale next season. It is comparatively easy for American growers to find time for their numerous sprayings, because most of them have only the Apple crop to attend to, whereas we in this country have bush fruits and Plums also, and some growers have Strawberries in addition. Again, Americans, with only 30 to 40 trees to the acre, have very little hand-hoeing to do, whereas we have an immense amount to perform.

PESTS OF BLACK CURRANTS.

Writing on extra spraying reminds me of the need of treating Black Currant bushes where they are subject to leaf rust (*Gloeosporium ribis*). This is a serious cause of deterioration in the bushes, as the leaves drop

prematurely. Spraying with Bordeaux mixture as soon as the leaves are mature is recommended by Mr. George Massee in his new book, *Diseases of Cultivated Plants and Trees* (Duckworth). By the way, the index of host plants in this book is not full enough, as a great number of diseases common to fruits of different classes are not named under the headings of those fruits.

An insect pest of Black Currants which has been referred to on previous occasions is an aphid black to the naked eye, but olive-green under the microscope. This pest, which has not yet been identified by one of our best entomologists to whom it has been sent in two

growths issues from the cut ends of the shoots, which is an undesirable development, since these growths become the subjects of a fresh infestation late in the season. A *Southern Grower*.

ANOPTERUS GLANDULOSUS.

ANOPTERUS GLANDULOSUS is an old garden plant, although not commonly met with. The inflorescences (see fig. 75) bear some external resemblance, at first sight, to those of an *Andromeda*, or some other member of the *Ericaceæ*; but the plant belongs to the *Saxifragaceæ*, and is a native of Tasmania. It first bloomed in this country in 1846, at Messrs. Lolligues' nursery.



[Photograph by John Gregory.]

FIG. 75.—ANOPTERUS GLANDULOSUS: FLOWERS WHITE, ROSE-TINTED.

seasons, although it appears to be common, attacks the ends of shoots, causing the terminal leaves to curve umbrella fashion over the insects. This is mentioned in order to provide the opportunity of stating that, of two methods of destroying the pests, one is by far the better. The better method consists in women with small vessels filled with a strong mixture of quassia and soft soap going through the plantations, and bending over every affected shoot so as to immerse the insects completely in the mixture. The other plan, which is that of pinching or cutting off the infested ends of shoots and burning them, is objectionable, because a bunch of fresh

and at Kew Gardens. The flowers are white, with a tinting of rose colour, the large racemes being erect, simple, and terminal. The species forms a very handsome evergreen shrub, with leathery, almost sessile, toothed leaves. The plant requires the protection of a greenhouse, except in very favoured parts of this country. Planted in sandy loam and peat, it grows well, and produces a display of flowers during April and May. Propagation may be effected by means of cuttings, which require to be rooted under a bell-glass in a cool house, after the manner of most hard-wooded cuttings. The photograph from which the illustration was prepared is of a plant growing in the gardens at Nymans, Crawley, Sussex.

NURSERY NOTES.

HARDY FLOWERS AT YORK.

THE Nurseries of Messrs. James Backhouse & Son, Ltd., at York, are always a source of great pleasure to lovers of hardy plants. On the occasion of a recent visit, I found much that was of interest, although it was not my first inspection of the nursery. The more popular hardy border flowers are cultivated extensively, including large numbers of *Delphiniums*, embracing the best of the newer varieties of British and foreign origin. *Pyrethrums*, also, are grown largely, although the plants had passed out of flower, or almost so, at the time of my visit. There is a large and choice collection of bearded *Irises*, including the new varieties raised by Mr. George Yeld. Many of these are exceedingly chaste and beautiful. There are also numbers of Japanese *Irises*, with a representative collection of other sections of this charming family.

Potentillas, also, are numerous; in addition to an unusually good collection of the border varieties, the Alpine section is well represented, among these being three forms of *P. nepalensis*—the type; Miss Willmott's fine dwarf, deep-coloured variety; and Gibson's *Scarlet*, the colour of which is well indicated by the name.

Campanulas of all sections are largely grown; it was in this nursery that the handsome *C. persicifolia alba* Backhousei originated. Other tall *Campanulas* are also extensively cultivated, as well as the dwarfier Alpine forms. *C. Tommasiniana*, *C. pulloides*, *C. pulla*, *C. garganica*, *C. g. hirsuta*, *C. carpatica*, in several varieties, and many other species are included in the collection. Hardy *Geraniums* are also plentiful; among those in bloom was the old, blue, double-flowered *G. pratense*, once a common plant in gardens. *Scabiosa caucasica*, with the allied *Centaureas* and *Cephalarias*, were doing well, the former being finer than usual. The *Centaureas* embraced *C. dealbata*, a good garden plant, not so frequently met with now as some 20 or more years ago. *Helenium autumnale*, *H. pumilum magnificum*, and *H. cupreum* were noticed among the representatives of this genus. *Incus* comprised a good form of *I. glandulosa*, and some of the best of the other *Elecampanes*. *Geum Helldreichii*, *G. montanum*, *G. miniatum*, and other species were remarked, together with *Helianthus*, *Rudbeckias*, and other yellow-flowered *Composites*. A large stock of *Eremuri* had flowered well. A collection of *Helianthemums* included, among named varieties, *Golden Queen*, *venustum plenum*, *tigrinum*, *Ruby Gem*, *croftianum*, *Perfection*, and *Garibaldi*.

Mention of these leads me to refer to the large collection of Alpines, mainly grown in pots. *Saxifrages* are very numerous, as is to be expected in a nursery where Alpines have for many years been a speciality. *Sedums*, also, and *Sempervivums* are seen in great variety, and the large genus *Primula* has its claims well considered in the extensive collection cultivated at York. The somewhat scarce *Phyteuma comosum* was doing well; it is a more charming species than the taller *P. orbiculare*. *Convolvulus Soldanella* was covered in bloom; also the rather uncommon white variety of *Ononis arvensis*. *Jasione perennis*, *Lychnis pyrenaica*, *Gypsophila cerastoides*, *G. repens*, and *Alyssum repens* were also seen. A scarce plant was noticed in *Saponaria Weidmanniana*, after the style of *S. ocymoides*, but having white flowers shaded with pink.

Tunica Saxifraga, *Cheiranthus Allionii*, *Edelweiss*, *Acantholimon glumaceus*, a large number of the *Primula* species, several *Thymes*, such as *Thymus azoricus*, the best *Ramondias* and *Haberleas*, and a large number of other Alpines were well grown. Bamboos are largely cultivated in pots, also such useful rock garden shrubs as *Muehlenbeckias*, *Cytisus shipkaensis*, and *C. x kewensis*.

The rock-garden was furnished with plants of a suitable character, presenting a natural

appearance, heightened by the water plants which occupy the pools at its base. This rock-garden has formed a model for many of a less extensive character, constructed by Messrs. Backhouse. Less vigorous and choice species are carefully planted in the rock garden, and most of them have become well established. Time did not admit of a full examination of the other extensive departments of the nurseries, but enough was seen to show that the reputation of these famous nurseries is being well maintained. *S. Arnold.*

A JOURNEY TO JAPAN.

(Continued from page 177.)

EASTER brought us up country to Nuwara Eliya, and to the park and fine garden at Hakgala. Nuwara Eliya, about 6,200 feet above sea-level, has quite a different climate from that of Peradeniya. At about 2,000 feet Palms disappear from the landscape. The cooler up-country begins, and plantations of Tea prevail, covering vast areas. Species of Eucalyptus, Tree Ferns, and *Aralia papyrifera* are conspicuous. The air is fresh and cool, being quite agreeable. Frosts may prevail, and at this time of the year tender flowers have to be covered every night. The park is under the same management as Peradeniya. *Cupressus macrocarpa*, the Monterey Cypress, is doing exceedingly well, also *Acacia decurrens*, and others. The neighbourhood abounds in streamlets, covered with the pretty, white flowers of *Apongeton crispum*, which is also to be found in the large lake, the latter lying naturally between the hills. *Apongeton distachyum* is planted, and, like most plants of the Cape, does well. *Richardia æthiopica*, besides many other introduced plants, such as *Ulex europæus*, grow wild. The trade in flowers of *Richardia* is con-

At this high elevation, the evergreen forests, with trees of magnificently-coloured foliage, storm-beaten and sunburnt tops, and groups of Tree Ferns in the ravines, on the slopes, or in the shade of high trees near the water of the streamlets, are prominent features.

The undergrowth is very thick, it being impossible to pass without cutting a way through. Orchids, Ferns, as well as climbing plants, abound on the trees; *Selaginellas* cover the ground, and growing up the stems and leaves are mosses and lichens. Ferns are very plentiful, and epiphytes and parasitic plants of all kinds are, as in all parts of Ceylon, much in evidence.

Geniosporum elongatum is a very pretty flowering plant of the patanas; it belongs to the Labiate, and this, as well as *Apongeton crispum*, of the rivulets, already mentioned, are worth introducing to gardens. I was able to collect seed of the latter, but the former was only in flower. There is a rich collection of plants in the botanic garden at Hakgala. It is called after the mountain which backs it, and should be seen by everyone visiting Ceylon. The scenery from this high elevation, amongst steep rocks, embraces a large part of Ceylon. Far out are the eastern mountains, and below the deep valleys, with paddy-

NOTICES OF BOOKS.

MAKING HORTICULTURE PAY.*

As the sub-title of this book and the reference to compilation indicate, it is made up mainly of extracts from the writings of persons engaged in fruit-growing or gardening. The extracts are of very unequal merit, and the Editor does not appear to recognise the fact that, whereas some are excellent, others are no better than examples of "how not to do it." All have reference to American practices, which, in many respects, are not suitable to this country. For example, the American practice as to cultivation in fruit plantations is based largely upon the dread of injury from drought, which is not a primary consideration in this country in relation at least to tree fruits. Hence we have much about cover crops in orchards, which are foreign to English practice. Then, in the United States, ploughing is usual between rows of fruit trees, except where the "sod and mulch" system prevails. Here we should never think of letting a plough be used in a fruit plantation. The difference in practice is based upon climatic differences. In the United States, the deep rooting of trees is desired, as a security against injury from drought, and apparently the destruction of surface roots by ploughing is not regarded as disadvantageous. In this country, on the other hand, we encourage our fruit trees to root near to the surface of the soil, and often have reason to dread their entry into the cold and unfertile subsoil. Apple trees are commonly 30 ft. or more apart in the United States, and this affords plenty of room for the plough, and possibly care is taken not to let the implement work too close to the trees. At any rate, the great Apple crops grown on the big trees of the United States show that the system of cultivation pursued is not harmful. But when ploughing between rows of small fruit bushes and Raspberry canes is mentioned, we have no hesitation in condemning it, no matter where the practice is pursued. How ploughing can be done, as described, in a plantation with Gooseberry bushes 6 ft. by 4 ft. as a bottom crop, we cannot imagine. With respect to mulching, when this is done with farmyard manure, it is akin to English practice. But many American fruit farmers cart any kind of green rubbish they can collect into their orchards to place around their trees. If the practice were pursued here, the result would be to lead to more expense in destroying the weeds that would grow around the trees than the mulch would be worth. Very little farmyard manure, however, is obtainable in most parts of the United States, and green crops ploughed in are relied upon mainly for manure in arable fruit orchards, supplemented by artificial manures in some cases. As for the numerous grass orchards, the mulching system is the chief manurial agency.

The book is devoted partly to culinary vegetables, and to a very small extent to flowers. There is much in it to interest an English reader, and some of the practices described as successful in the United States are worth the consideration of cultivators of fruit and other crops in this country. But there is a lack of systematic and authoritative instruction, whilst discrimination is needed in deciding between the good and the bad methods described.

* *Making Horticulture Pay*. Experiences in Gardening and Fruit-Growing. Compiled and edited by Mr. G. Kams. (New York: Orange Judd Company.)



FIG. 76.—NATIVES VISITING A FLOWER SHOW IN CEYLON.

siderable. The climate is very healthy, and the present time is the best season. One leaves the hot, low country by rail in the morning, and arrives by night in the most pleasant, cool atmosphere of an average of 58°.

Hakgala Gardens are some miles distant from the park, and, being more sheltered, are never visited by frost. Tree Ferns abound on the slopes of the hills, near the water, and on the roadsides. The hills are mostly covered with virgin evergreen forest, and, in order to retain the natural forests, the Government does not sell ground for cultural purposes above 5,000 feet.

The forest is largely surrounded by grassland, called "patanas," and the line where grass and trees meet is so very sharp as to have the appearance of being artificially made. The patanas are burned by the natives, as the burning is followed by young grass, which is grazed by cattle. *Lobelia nicotianefolia* is the most conspicuous plant near Nuwara Eliya. In the patanas, where wild Manna grass prevails, the only shrub or tree to be found is *Rhododendron arboreum*, from 9 feet to 15 feet high, and many hundreds of years old, having withstood numerous fires. They are covered in March and April with masses of scarlet flowers.

The hills and slopes, with grassland and *Rhododendron*, alight with far-spread patana fires, afford a sight never to be forgotten. The sunrise, too, is most beautiful. Monkeys and elephants are found in the neighbourhood, but the forests are free from dangerous animals. The climate, which is very healthy, reminds one of Northern Italy. It is fortunate that, in this tropical island, there is such a cool health resort, where at times one can get out of the powerful heat of the low country.

Hakgala Garden is laid out in a still more natural style than Peradeniya gardens, the situation on the slope of a mountain affording greater possibilities. Nurseries and flower-gardens are interspersed as positions allow, and large drives, connected by natural paths and steps, which lead to lovely groves of Tree Ferns and climbers, run through the whole park. The Tree Ferns do exceedingly well, not only the native species, but also those which have been introduced, and the whole garden has a very natural appearance, for the fine, old trees of the virgin forest have been well cared for.

At Heneratgoda, near Colombo, and only about 30 yards above sea-level, is another botanical garden. This garden contains the oldest Para Rubber

trees, brought to Ceylon in 1876: from their seeds the whole of the great Rubber industry of Ceylon has sprung. Tapping for Rubber may be seen in progress. The garden is rich in useful and interesting trees, creepers, and Palms.

The land about Colombo is largely under cultivation and produces fine fruits and vegetables for the Colombo market. Coconut Palms are seen in every garden, although these are harmful to the other plants, owing to the roots intruding on every flower bed.

Caladiums of every shade are grown in the gardens. Roses, although they do not flower much, are also there, and in large pots along the paths and around the houses are to be found Ferns, Palms, Begonias, and Marantas. Native Orchids grow on the trees; some gardens contain either a collection or a mass of one species. The Lettuce Tree (*Pisonia morindifolia*), the leaves of which are cooked as a vegetable, forms quite a feature amongst old and new houses.

The Government School Garden, near Colombo, is also worthy of a visit. The Ceylon School Gardens are under the supervision of Mr. C. Dricherg. Europeans have greatly assisted in the development of this wonderful country, but the standard

work, needlework, fibres, mats, and tuggery of Palm leaves, including the strips known as "olas," on which the old native scriptures and other books are written.

For the benefit of those visiting Ceylon, I may say that travelling accommodation is satisfactory, and, in some places, even more than this. Although good cooking can be had, this is not the case where, as in some instances, it is left to the coolie and Ceylon natives.

Minerals do not abound in Ceylon, but its precious stones and pearls are famous, and, although at first an exorbitant price is asked for them, they can be purchased reasonably by bargaining. *Fr. Henkel.*

(To be continued.)

NEW CHINESE TREES AND SHRUBS AT ALDENHAM HOUSE GARDENS.

MR. E. H. WILSON'S third expedition to China in search of new species of plants for introduction to gardens was organised by Professor Sargent, of the Arnold Arboretum, Boston.



FIG. 77.—ZEPHYRANTHES FLOWERING NEAR THE DIRECTOR'S OFFICE IN THE ROYAL BOTANIC GARDEN, PERADENIYA, CEYLON.

of education and wealth of the natives does not appear to have risen much for many years.

Although Ceylon has been under the influence of the East and West for centuries, it still retains its own customs, languages, and religions.

Agricultural and horticultural shows are sometimes held in the different towns of Ceylon, and I had the opportunity of visiting one at Nuwara Eliya on March 28. A large variety of fruits and vegetables was shown (see fig. 79). Flowering and foliage plants were also displayed, and one tent contained a collection of cut flowers (see fig. 78), the Roses being very pretty.

Apples, as well as Pears and Peaches, are grown at this high elevation (about 6,000 feet), and the show being open to the whole country, fruits, flowers, plants, and vegetables from the tropics were exhibited. These included Coconuts, Plantains (Bananas), Pineapples, Limes, Lemons, Mangos, and Papaws. Very interesting was the display of native agricultural and horticultural products, both wild and cultivated varieties being shown. There was also an exhibit of metal-

U.S.A. The Hon. Vicary Gibbs and a few other persons interested in the expedition each received a portion of the first consignment of seeds in the early part of 1908. Those which were sent to Aldenham were immediately sown in small boxes, and labelled, each according to the number specified on the seed-packet.

The first batch, which was a somewhat large one, was sown, and the seed-pans placed in a gentle heat for a time, where many of the seeds germinated rapidly. This first batch of seedlings was at once removed to cooler and drier quarters. All the later sowings were placed out-of-doors in cold frames, where protection could be afforded from heavy rains. When the seedlings were large enough, they were pricked out into boxes, and, to induce them to grow freely, they were kept under rather close conditions in cold frames, and damped frequently. At the time of transplanting, two or three of each number were also potted into 60-sized pots, for the purpose of forming a representative collection. These have since afforded much interest, and

the collection shown at the Royal Horticultural Society's meeting, on Tuesday, August 30 (see fig. 72), and for which the Society's Gold Medal was awarded, formed a part of these plants that were potted. As the plants became established, they were transplanted in larger pots, those from the boxes being transferred to the open ground. The majority of the subjects grew with wonderful freedom, and, with the exception of a few, which Mr. Wilson queried as being tender, they survived the cold of winter well. This, I believe, was due to the collector selecting seeds from plants growing at the highest altitudes. Altogether, I believe, Mr. Wilson secured seeds of about 1,300 different kinds plants, and although many of these are of a herbaceous nature, we have now some 570 different shrubs represented in the collection. A few of these we have exchanged with other collections from the same source. To name, or to attempt to describe the greater part of the collection would require too much time and space; in the majority of cases we have only the genus and the collector's number to refer to. Especially numerous were the following:—*Berberis*, represented by some 20 numbers, *Cotoneaster*, *Evodia*, *Lonicera*, *Prunus*, *Pyrus*, *Clematis*, *Rubus*, *Rosa*, and *Spiræa*. The *Berberis* particularly promise to prove valuable additions to our garden shrubs: the plants are small, as most of them were raised from seeds received from late consignments, but the following are making fine specimens:—Nos. 1073, 1356, 1137, 1344, 1038, 1267 (which Wilson describes as a new species), 1261, 930, 1177, 105aa, and *B. polyantha*. Amongst the *Buddleias* are many fine forms of *B. variabilis*, and one of these, which has been named *B. v. gigantea*, received an Award of Merit at the last R.H.S. meeting (see p. 188). *B. nivea* is a free grower, and the foliage is covered with a dense, white tomentum. Others include *Callicarpa* in variety, *Catalpas Fargesii* and *vestita*, *Cedrelas*, which form handsome, small trees; *Celastrus*, *Celtis*, which form small trees, several having handsome fruits; *Cercis*, including *C. racemosa*, which is both hardier and a better garden plant generally than *C. chinensis*; *Clematis* in great variety, amongst which *C. Soulieana* is now flowering, the pale yellow tubular blooms being deliciously scented; and various *Cocculus*, which form handsome foliage climbers. Of *Cotoneasters* we have a great variety, including *C. humifusa*, which is quite distinct from any other species, forming a useful trailing plant. *Cynanchum* is a distinct climber, with pink flowers much resembling *Hoya carnosae*. There are also species of *Elæagnus*, *Dentidia*, *Diervilla*, *Diospyros*, *Ehretia*, *Eleutherococcus*, *Eucommia ulmoides*, *Eupteleas* (forming fine foliage plants), and *Eyodias*, forming small trees of graceful habit; a new *Forsythia*, *Fraxinus chinensis*, *Hydrangea* (in numerous variety), *Idesia polycarpa pubescens*, *Ilex Pernyi*, *Lespedezas*, beautiful late flowering shrubs; *Liquidambar formosana*, the Chinese Tulip tree *Liriodendron chinensis*, *Loniceras* in bush and climbing form, *Mulberries*, *Neillias*, *Pæderia*, a free-growing climber with peculiar flowers; *Paulownia* 769, a plant with massive foliage, and one that Wilson says should move absolutely hardy, with beautiful dark purple-violet coloured flowers; *Philadelphus*, *Piptanthus* 885, to which the collector especially refers; *Potentilla*, *Pterocaryas*, *Pteroceltis*, and *Pyrus* in great variety, of which those bearing the following numbers appear to possess large, elegant foliage, 956, 997, 1255. Of *Prunus* we have great variety; also *Rhamnus*, *Rhus*, the leaves of which assume intense autumnal colouring; *Ribes* and *Roses* of the *moschata* and *Banksia* types, but as yet these have not flowered. *Rubus* is seen in endless variety, many of the plants in pots being 3 feet high. 188, *R. lasiostylus*, has curious white fruits. Others of

large stature are *R. nivicus*, *R. innominatus*, *R. coreanus*, *R. fuscus*, *R. Lambertianus*, *R. ichangensis*, *R. Parkerii*, and *R. bambusa*, all of which possess striking foliage. Others of lesser growth, but worth special mention, are *R. polytrichus*, *R. Playfairii*, *R. omiense*, *R. rosafolius*, and several others under number only. *Schizandras* form good climbers.

To the list must be added *Schizophragma*. *Spiræas* in considerable variety, and including the new *S. Veitchii*, *S. Henryi*, *S. dasyantha*, and others of the *sorbifolia* type; *Stachyurus*, *Staphylea*, such as *S. holocarpa*, *S. h. alba*, and *S. Bumalda*; *Strax* 884, which Wilson specially refers to; *Stranvæsia undulata* and *S. 1064*; *Symplocos*; *Syringa*, including No. 1273, a new species; *Viburnums* in great variety. The seeds of these last named were slow in germinating, and did so in the autumn. *Viburnum 1288* is a conspicuous plant of good growth. *V. rhytidophyllum*, now fairly well known, is also included. *V. coriaceum* is a handsome evergreen species, with large dark green leaves. *Vitis* are also very varied, and several of them assume good autumn colouring in the leafage. *V. armata*, *V. sinensis*, *V. Delavayi*, *V. flexuosa*, and *V. 235*. This last

so perpetual and consistent a bloomer under glass as *Richmond* or *Liberty*, yet it has quite as good form, is much deeper in colour, is a very reliable forcer for an early winter crop, and, in addition, has excellent fragrance. The *Tea Roses* and their many beautiful hybrids are double, more generally forced, not only because of their beauty, but also for the greater succession of flowers they give in comparison with the *Hybrid Perpetuals*. Beside a selection of *Hybrid Perpetuals* for a supply of dark blooms to contrast with the lighter shades of the *Hybrid Teas*, the perfect white of *Fran Karl Dauschke* and the clear pinks of *Mme. Gabriel Luizet*, *Mrs. R. G. Sharman Crawford*, and *Mrs. John Laing* must be included, as well as the varying and intense shades of crimson and maroon found in *Victor Hugo*, *Captain Hayward*, *Fisher Holmes*, and *Prince Camille de Rohan*. But it was not so much the varieties I wished to note as the fact that operations for early forcing must be taken in hand very shortly. My own experience goes to show that this section or class require much steadier treatment at the first than is the case with others, and I advise a beginning soon. In the case of established plants that have

hole of the flower pot stands, are best. Should disturbing the roots cause the wood to shrivel, syringe the plants freely, but avoid too much root moisture while the plants are in the open. Plants may be lifted from the nursery beds as soon as the shoots are fairly ripe.

As the nights get colder, remove the plants to some cool structure such as a late vinery or a pit; if they have been treated correctly, they will be carrying new growths an inch or two in length, and these must not receive a check. If they are kept growing steadily from the early part of December, they will soon respond to sun heat in the early part of the year. This steady treatment avoids the "blind" or flowerless growths so frequently found upon *Hybrid Perpetual Roses* that have been unduly forced or allowed to experience a check of any kind. *A. P.*

CULTURAL MEMORANDA.

BLACK STRIPE IN TOMATOS.

This disease usually makes its appearance when the plants are 2 feet to 3 feet in height. A black streak appears in the stems here and there, and, if not immediately checked, the disease spreads through an entire house with great rapidity, completely spoiling the plants, if not killing them outright.

Black stripe enters deeply into the tissues, as will be seen on cutting a section of the stem; growth appears to cease, and the cells shrivel in the affected parts. The disease quickly spreads to the fruit and leaves, which become deformed and covered with a network of black lines, growth becomes weak, and flowers, which are not already set, fall off.

It is most prevalent in houses in which Tomatoes have been cultivated year after year, especially if the plants are grossly fed and inclined to grow rank.

I have tried several good fungicides, also dusting, and vaporising with flowers of sulphur (the latter, by the way, is excellent for mildew), but all these remedies had little or no effect on black stripe. Excessive sun-heat is the only remedy I have found effectual in checking it. We close the house about noon on a bright day, allowing the temperature to rise to 115° or 120° Fahr., and I have never known this remedy to fail.

On one occasion last season, the disease made its appearance during a spell of dull weather, and several days elapsed before a bright day appeared, and then only a temperature of 103° Fahr. was obtained, which had practically no effect. Several days later, a temperature of 120° Fahr. was reached, and the result could be seen almost immediately. The disease was cured, and all the affected plants commenced to grow again, although the old scars remained; but these soon became healed, like wounds on the trunk of an actively-growing tree.

The temperature necessary to eradicate the disease appears to be about 115° Fahr. Care should be taken that the roots are sufficiently moist, as such high temperatures cause excessive transpiration, and, if the roots are at all dry, burning results. The foliage should not be thinned excessively before shutting up the house, and if some of the more exposed fruits are slightly shaded from the direct rays of the sun, it is an advantage, as I have occasionally had a fruit, here and there, scalded.

Our Tomato houses are not shaded in any way, and the thermometers from which the above temperatures were taken were more or less in the direct rays of the sun. The houses are not opened until the following morning, to allow the temperature to fall gradually, as a sudden change to colder conditions might have serious effects. *W. J. J.*



FIG. 78.—FLOWER SHOW AT NUWARA ELIYA, CEYLON.

is a promising plant. The foregoing forms but a random list in alphabetical order, but it will, perhaps, serve to convey some knowledge of the numerous genera that are included in this interesting collection of new trees and shrubs. *E. Beckett, Aldenham House Gardens, Elstree.*

THE ROSARY.

HYBRID PERPETUALS FOR FORCING.

With the advent of *Richmond*, *Liberty*, *General MacArthur*, *Chateau de Clos Vougeot* and a few more of the best dark-coloured *Hybrid Teas*, the older class of *Hybrid Perpetuals* have been somewhat neglected for pot culture. But we should still keep to the latter for their perfumes, some of which are totally distinct, and among the sweetest of all. The old favourite, *General Jacqueminot*, has been forced for close on 60 years, and probably it is the variety most generally grown by amateurs. Granted that it is not

been stood in the open, the wood should be fairly well ripened by now. Examine the pots, and see that the drainage is perfect. I usually turn most of the plants out of their pots for this purpose. By this means, one can also decide better if a shift into a larger pot is desirable, besides being able to remove some considerable portion of the top compost; there is also considerable benefit in adding only a little fresh compost. I think sufficient use is not made of $\frac{1}{2}$ -inch bones for drainage, as these are a great help in feeding the lower roots, whereas broken pieces of pots are quite useless in that connection. We prune our *Hybrid Perpetuals* rather harder than the *Teas*, especially when thinning the centres. After the plants have been examined they should still remain in the open for a time, but care must be taken to see that worms do not enter the pots through the drainage hole. If pieces of slate are used to prevent this, see that they do not adhere so closely to the pot as to cause the soil to become water-logged. For this reason beach stones, with a spoonful of soot just where the drainage

The Week's Work.

THE FLOWER GARDEN.

By E. BICKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Hertfordshire.

Heaths.—Many of the Heaths are now making a fine display in the flower garden with their profusion of showy flowers. Few plants are more adapted for grouping in masses to create an effect than the hardy Ericas, for, although isolated specimens are very beautiful objects, large, irregular masses are even more so, especially on open, undulating land. With a good selection of species and varieties, it is possible to have Heaths in flower out-of-doors almost the whole year round. They do extremely well in wind-swept positions, where most other subjects fail, and they have another advantage in requiring little attention, an occasional weeding being all that is necessary. They may be planted during the autumn and winter months, whenever the ground is in a suitable condition. The plants are not so

vide showy fruits, but are pleasing also when in flower, and are of an attractive nature generally: *Cotoneaster*, *Rhamnus*, *Euonymus* (the Spindle Tree is especially beautiful when grown as a standard), *Viburnum*, *Lonicera*, *Berberis* (in great variety), *Crategus*, *Hypericum*, *Hippophaë*, *Rosa rugosa*, *Pyrus*, *Rhodotypos kerrioides*, *Rubus*, *Colutea arborescens*, and *Coriaria terminalis*.

General work.—At this season of the year, cuttings of many varieties of Roses will root in the open ground. Select well-ripened shoots and plant them in soil containing plenty of road-grit, labelling each variety carefully. The season for Sweet Peas is almost finished, and those of the earliest sowing should be discarded altogether. If seed is required, gather the pods at intervals when the weather is favourable, and place them in an open, dry position to ripen. Some bulbs, including *Narcissi*, and English and Spanish *Iris*es, may now be planted with advantage. Keep the hoe constantly at work amongst the beds and borders, and see to the tying of the shoots

and everything else in readiness before disturbing the border. The bulk of the new soil should consist of sound fibrous loam, chopped roughly. To this may be added a fair proportion of old mortar rubble, crushed bones, wood ashes and a sprinkling of any of the artificial manures specially recommended for the purpose. A good heap of broken bricks should be ready to hand, also a stack of freshly-cut turves to place over the drainage. Start at the outside of the border, that is, at the point furthest from the vines, taking out a trench down to the drainage. Work the soil away from the roots, using a fork for the purpose, being careful not to injure them. As the work proceeds, the roots should be tied in bundles as far as possible and covered with a damp mat. This lifting is the most critical part of the operation, and should never be entrusted to a novice or a careless person. Let the old soil be cleared away as the work proceeds. If sufficient new loam cannot be obtained to entirely renew the border, part of the old compost may be utilised, but not if the latter is in a sour,



FIG. 79.—EXHIBITION OF FRUITS AND VEGETABLES AT A CEYLON FLOWER SHOW.

fastidious in their soil requirements as many people imagine, and peat is not absolutely necessary, although it proves a valuable addition to the natural staple if it is deficient in humus. The soil should be well dug, and have plenty of decayed vegetable matter and leaf-mould incorporated with it, as well as a quantity of sand. Allow the soil to settle before planting, which should be done firmly, and a good mulch of decayed farmyard manure should be placed about the roots when the planting is finished. The various forms of *Calluna vulgaris*, the common "Ling," are especially useful at this season. Besides being beautiful in bloom, some of the varieties have striking, variegated foliage.

Shrubs with ornamental fruits.—At the present time many shrubs are attractive in their showy fruits, which provide a touch of colour in the shrubbery just in advance of the autumn leaf-tinting, making them of great value, either for the mixed shrubbery or as isolated specimens. The following subjects not only pro-

vide in the case of plants requiring attention in this matter. The Dahlia season has been largely spoiled by the wet weather. The *Pæony* and *Cactus*-flowered varieties are the most valuable for supplying cut blooms. We cultivate a variety of the Pom-pom section named *White Aster*; this is a good variety generally, being free in flowering, and the blooms are very useful for many purposes.

FRUITS UNDER GLASS.

By B. GOODACRE, Gardener to Sir ERNEST CASSELL, G.C.B., Moulton Paddocks, Newmarket.

Renovating of vine borders.—The vines in the earliest houses having now ripened their growths, any intended alterations to the border or overhauling of the roots may be proceeded with. If the drainage is faulty it will be advisable to lift the vines entirely and replant them afresh. The work should be done quickly, as the vines will suffer if the roots are out of the ground for any great length of time. Have the fresh soil prepared

inert condition, in which case it will be better to employ a quantity of good soil from the kitchen garden. Having put the drainage in a satisfactory state and covered the drainage materials with the fresh turves, placed grass-side downwards, replanting may be done. Spread the roots straight out at different depths in the border, but always well towards the surface. Any bruised or broken roots should be cut back to sound tissue, making a clean cut. Long, bare roots, devoid of fibre, may be notched at intervals along their upper sides. Fill in the soil as the work proceeds, treading and beating it firmly. When finished, the border should be a few inches above the original level to allow for the soil settling.

Top-dressing.—When it is not considered necessary to renew the border, as advised, old vines and those in an unsatisfactory condition may be greatly assisted by top-dressings. Remove as much as possible of the inert soil from the surface until the roots are exposed, and

replace it with fresh compost, in which a good proportion of mortar rubble and artificial manure has been added. Such treatment will encourage the development of surface roots and assist in other ways in restoring the vines to health and vigour. When examined 12 months hence, this fresh beam should be full of fibrous roots. Liquid manure may also be given with advantage to vines which require assistance. When the Grapes are cut, a thorough soaking of the diluted drainings from stables and cowsheds will help to recuperate vines which have carried heavy crops, or a thick mulch of fresh cow manure placed on the border and well watered by means of either can or hose-pipe will produce results equally satisfactory.

PLANTS UNDER GLASS.

By JOHN DONOGHUE, Gardener to JOSEPH PICKERSGILL, Esq.,
Bardon Hill, Westwood, Yorkshire.

Salvia grandiflora splendens.—The intense scarlet colour of the flowers of this beautiful autumn and winter-blooming plant is always appreciated. Salvias are comparatively easy of cultivation, and are most useful for conservatory or home decoration, besides supplying flowers that are valuable for dinner table and other decorations. Stock plants intended for autumn-flowering may be given top-dressings of some artificial fertiliser, and, alternately with the ordinary water, weak liquid manure from the farmyard. Salvias are gross feeders, and must be regularly supplied with water, for if the roots are allowed to become dry, the bottom leaves will drop, and the bare stems detract very much from the decorative value of the plants. Previous to housing them, which should be done about the end of September, the foliage should receive a thorough cleansing.

Solanum Capsicastrum and *S. Pseudocapsicum*.—Where these plants have been cultivated in pots, red spider and aphid will be found most troublesome pests. The leaves should therefore be syringed thoroughly with an insecticide. A cool greenhouse from which the frost can be excluded will furnish suitable winter quarters for both species. As soon as the berries are of a bright colour, stimulants should be withheld, and the surroundings kept as dry as circumstances permit.

Pot Roses.—Plants intended for early forcing should have their shoots well ripened previous to pruning. They should be stood well apart on a good layer of ashes throughout the summer and autumn in full exposure to sunshine. Extreme care must be exercised in affording water, and mildew eradicated at once by frequent syringings with sulphur water; aphides and red spider must also be combated.

Cuttings of Marguerite and Fuchsia should now be inserted. Select the healthiest shoots and place them firmly, about an inch apart, around the edges of "60" pots filled with a sandy compost.

THE HARDY FRUIT GARDEN.

By A. R. SEARLE, Gardener to the Marquis of NORTHAMPTON, Castle Ashby, Northamptonshire.

Pruning the Morello Cherry.—The Morello requires to be pruned quite differently from the Sweet Cherry, the method being similar to that used with Peaches and Nectarines. All useless and old fruiting wood that can be spared should be cut out so as to allow room for training some of the young shoots, as these will produce the best fruits next season. It is wiser to prune the trees now, or immediately after the crop has been gathered than to wait until the leaves have fallen, as the operator will be better able to decide, while the foliage is still on the trees, which wood can best be spared. Another advantage is that the young shoots are most likely to be allowed a proper distance apart, and the danger of overcrowding avoided. In taking out the useless wood before the leaves fall, more light and air reach the remaining wood, thus enabling it to mature more thoroughly. After the necessary pruning has been completed, the trees should be given a good syringing with a suitable insecticide to cleanse them of any insect pests that may be present on the foliage. Make sure that sufficient moisture has reached the roots; this is best ascertained by using a border tester.

Packing of Figs and Peaches.—Where these

fruits have to be sent a considerable distance by rail, great care must be exercised both in gathering and packing them. Figs should be packed in a single layer in a box $3\frac{1}{2}$ inches deep, which will allow of a few soft vine leaves being used. Place the fruits close together in rows with a pad of cottonwool between each row; the remaining space should be filled with some soft packing material before placing on the lid. Peaches will need boxes an inch or more deeper than Figs, according to the size of the fruits. They should be wrapped in tissue paper, placing a small pad of wood-wool around each fruit. Pack them closely together, as in the case of Figs, and fill any space remaining with soft material, so that they cannot shift in transit.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to SIR TREVOR LAWRENCE,
Bart., Burford, Surrey.

Masdevallia.—The Masdevallias are not grown so extensively as they deserve to be; the principal reason is probably their small pecuniary value. Yet they include many beautiful, curious, and interesting species and hybrids. Few plants produce such showy and brilliantly coloured flowers as *Masdevallia ignea*, *M. Veitchiana*, *M. amabilis*, *M. coccinea*, and its many distinct varieties of the *Harryana* type. All of them produce a splendid effect when in bloom, and they are charming when arranged with the white flowers of *Odontoglossum crispum*. Other distinct species well deserving of cultivation are the pure white *M. tovarensis*, the yellow-flowered *M. Davisii*, *M. rosea*, and the orange-red *M. racemosa*, to which may be added several attractive and interesting hybrids, such as *M. Chamberlainiana*, *M. Gairiana*, *M. Courtauldiana*, *M. Rustonii*, *M. splendida*, *M. Chelsonii*, *M. Henrietta*, *M. Rebecca*, *M. Stella*, *M. Curlei*, *M. Fraseri*, *M. Pourbaixii*, *M. Acis*, *M. Ajax*, *M. Geleniana*, and *M. glaphyrantha*. Those species that are characterised by the singularity and quaintness of their flowers include *M. Gargantua*, *M. elephanticeps*, *M. ephippium*, *M. torta*, *M. Peristeria*, *M. macrura*, *M. coriacea*, *M. corniculata*, *M. leontoglossa*, *M. melanoxantha*, *M. Mooreana*, *M. Burfordiense*, *M. Schlimii*, and *M. velifera*. Among the dwarf-growing kinds is the extraordinary *M. muscosa*, with an extremely sensitive lip, a suitable companion being the still rare *M. xiphères*. Others that may be instanced are *M. polysticta*, with its spider-like flowers, *M. deorsa*, with distinct, drooping, metallic-like foliage, the pretty *M. Arminii*, *M. Wageriana*, *M. Estradae*, *M. caudata*, *Shuttleworthii*, *M. Schröderiana*, *M. irrorata*, *M. caloptera*, *M. xanthina*, *M. macroblepharis*, the Gnat Orchid, *M. nidifica*, *M. Nilsonii*, *M. anchorifera*, *M. ludibunda*, *M. platyglossa*, and *M. hieroglyphica*. Well-grown plants of any of these, when in full bloom, form pretty little objects, and are appreciated generally. These dwarf-growing plants should be grown on a damp, elevated stage, with their leaves well up to the roof-glass. They should never be allowed to become dry at the roots, neither should they be kept in a saturated condition, or the leaves of many of them will damp off. The present is a good time to overhaul these Masdevallias, and where a house is devoted to their culture it should be thoroughly cleaned both inside and outside. The walls should be well scrubbed and white-washed, and, if the house has a north or north-east aspect, the stippling should be removed from the roof-glass. If any of the plants need repotting, or old, overgrown masses require to be divided, the work should be attended to at once. The winter-flowering *M. tovarensis*, *M. ignea*, and *M. Davisii* should not be disturbed now, unless they are in a very bad condition at the roots. February is the best time to repot them. Masdevallias form many roots, therefore they should be afforded a good root-run. The pots should be two-thirds filled with drainage, and for the rooting medium use *Osmunda* fibre, *Polypodium* fibre, and *Sphagnum*-moss in equal proportions, cut moderately finely, intermixing plenty of small, broken crocks. When repotting, keep the base of the plant on a level with the rim of the pot, and carefully work the compost between the roots. Pot with moderate firmness, so that when water is applied it will percolate freely through it. In dealing with large, worn-out plants, that have but few roots, divide them and pot the pieces up separately into small pots; when these are thoroughly re-established, bring them together again in one receptacle. As with

many other Orchids, the critical time with Masdevallias is during the first three or four months after root disturbance, it being an easy matter to over-water them, causing many old roots and leaves to die. Keep the surface of the compost just moist, and, preferably, towards the edge of the pot, rather than in the centre. With the exception of *M. tovarensis*, all these plants succeed in a comparatively low temperature, doing very well with *Odontoglossum* of the *O. crispum* type. During winter, it will be better to place them in the warmer and drier part of the house. Keep the repotted plants well shaded from all sunshine, but do not allow the shadings to remain over them longer than is really necessary. At this season a good damping between the pots twice a day will be sufficient, unless the house is very exposed to sun-heat, when an extra damping may be necessary. The black spots so frequently seen on the foliage of these plants are often caused by affording too much water at the root, also by maintaining too moist an atmosphere, especially during cold, dull weather in the autumn and winter months.

THE KITCHEN GARDEN.

By JOHN DUNN, Kitchen Garden Foreman,
Royal Gardens, Windsor.

Hoeing.—Take advantage of the fine weather to stir the soil among the growing crops. It will assist the plants in their growth and destroy countless small weeds which make their appearance now, and which are difficult to kill after September has passed. The neatness of the kitchen garden in winter will depend greatly on the attention it receives now, and no effort should be spared to rid the ground of weeds before the season is too far advanced.

Mushroom.—Beds that were spawned a month ago should be examined and, if the soil on the surface is dry, a gentle watering should be given through a fine rose. Rain-water should be used, and it should be warmed to about the temperature of the atmosphere in the house. Beyond syringing the walls and floor of the house when the atmosphere becomes dry, further moisture will not be necessary except in extreme cases. Collect material for successional beds; a steady, lasting heat is necessary, and the manure should be turned every second day to sweeten it. Beds that are freely mixed with soil continue to crop much longer than those composed of horse-droppings entirely, provided they are of sufficient depth to maintain the necessary heat and moisture.

Cucumbers.—Plants raised from seeds sown a month ago should now be ready for planting on small mounds of soil over a gentle hot-bed. The plants should reach the top of the trellis by the end of October, and for the present no fruits should be allowed to develop if this can be avoided. Cucumbers planted a month ago for cropping in early winter should have the shoots trained to the trellis 9 inches apart. The branches must be frequently pinched to promote sturdy, short-jointed growths. Top-dress the plants as often as roots appear above the soil, using light, turfy loam and leaf-soil in equal proportions. Plants in full-bearing should be thinned freely, and old, rough leaves removed to make room for the laterals, which should be pinched at the second joint beyond the fruit. Give liberal supplies of liquid manure and encourage these old plants to produce Cucumbers as late in the season as possible. A humid atmosphere, with a night temperature of 70° to 75°, should be maintained.

Tomatos.—Reduce the foliage on Tomato plants in the open air, and give a dressing of artificial manure to hasten the development of the fruits before cold nights set in. These plants are easily injured by cold, wet weather, and protection should then be given if possible. Tomatos in pots intended for furnishing fruits in early winter will have set several bunches of fruit, and should receive liberal feeding either as liquid manure or as a top-dressing of artificial manure mixed with loam. Keep the plants under cool conditions as long as possible, in order to prolong the supply of fruits well into the winter. Plants intended for successional fruiting will require full exposure to light and air, so that the berries may be set before dull weather arrives. Pinch out all side growths and reduce the foliage to allow light and air to freely enter amongst the plants.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Special Notice to Correspondents.—The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications to their authors, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

Letters for Publication, as well as specimens of plants for naming, should be addressed to the EDITORS, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Local News.—Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Illustrations.—The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens or of remarkable plants, flowers, trees, &c., but they cannot be responsible for loss or injury.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editors to see.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, SEPTEMBER 12—United Hort. Ben. & Prov. Soc. Coms. meet.

TUESDAY, SEPTEMBER 13—Roy. Hort. Soc. Coms. meet. (Lecture at 3 p.m. by Mr. C. Herman Senn, on "The Cooking of Vegetables.") British Gard. Assoc. Ex. Council meet.

THURSDAY, SEPTEMBER 15—Nat. Rose Soc. Autumn Sh. in R.H.S. Hall, Westminster.

FRIDAY, SEPTEMBER 16—Sheffield Chrys. Soc. Early Show (2 days).

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich—57.7°.

ACTUAL TEMPERATURES:—**LONDON.**—Wednesday, September 7 (6 p.m.): Max. 60°; Min. 50°. *Gardeners' Chronicle* Office, 41, Wellington Street, Covent Garden, London—Thursday, September 8 (10 a.m.): Bar. 30.3; Temp. 63; Weather—Sunshine.

PROVINCES.—Wednesday, September 7: Max. 55° Ireland S.W.; Min. 53° Yorkshire.

SALES FOR THE ENSUING WEEK.

MONDAY, TUESDAY, WEDNESDAY, THURSDAY, AND FRIDAY—Dutch Bulbs, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.

MONDAY—Twenty-fifth Annual Unreserved Sale of Pot Plants at The Nurseries, Chingford, Essex, by order of Messrs. H. B. May & Sons, by Protheroe & Morris, at 11.

TUESDAY—Great Annual Trade Sale of Winter-blooming Heaths, &c., at Burnt Ash Road Nurseries, Lee, S.E., by order of Messrs. B. Maller & Sons, by Protheroe & Morris, at 11.

WEDNESDAY—Great Annual Sale of Winter-flowering and other Plants at The Nurseries, South Woodford, by order of Mr. John Fraser, by Protheroe & Morris, at 11.

THURSDAY—Twenty-ninth Great Annual Trade Sale of Winter-blooming Heaths at Longlands Nursery, Sidcup, S.E., by order of Messrs. H. Evans & Sons, by Protheroe & Morris, at 11.

FRIDAY—Imported and Established Orchids, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

The Fertility of the Soil.

No horticultural problem has given rise to more discussion than that of the causes of the fertility of soils; and the varying pronouncements of science find an echo in the varied practice of cultivators. At one phase of the investigation, scientific men have proclaimed that, since plants absorb mineral salts of potassium, phosphorus, nitrogen, &c., from the soil, fertility depends on the quantities of these several plant-foods contained in the earth. At another phase, after the chemist had demonstrated that ordinary soil contains from 50 to 100 times more of these substances than a field crop extracts from it, the scientific agriculturist declares that the amount of mineral constituents is of less importance to soil-fertility than is the relation between the soil and the water it contains. In support of this view, he invokes not

only chemical analyses of soils, but also the facts that, in practice, the cultivator devotes a large proportion of his energies to increasing, or modifying in a manner favourable to plant-growth, the amount of water in the soil. As knowledge of the physiology of plants increased, it became clear that, though the soil is a great storehouse of plant-food, and contains almost unlimited reserves of the mineral substances essential to plants, yet, unless the mineral substances are present in an available form, that is, in a form in which they may be dissolved readily, the soil is unfertile.

During the dispute between the upholders of the chemical and the advocates of the physical theories of soil-fertility, a third party intervenes. Waving aside the disputants, he proclaims that the secret of fertility is to be found neither in the physical nor in the chemical condition of the soil, but in its biological state. He points out that the earth is a living earth; that it teems with bacteria—a clod of soil containing many millions of these living and very active organisms. For a time, the astonishing discoveries of the bacteriologist hold the attention of the audience interested in the physico-chemical discussion. In quick succession, he announces the discovery of nitrogen-fixing soil bacteria, supplying the proof that the earth renews its stores of combined nitrogen through the activity of certain of its bacteria, which take the free nitrogen gas of the air, combine it with other elements, and so render it available to the roots of plants. Next he shows that other races of bacteria change the ammonia, formed during the decay of plant- and animal-remains, into nitrates, and thus serve also the requirements of plants. Further, he reveals the presence of yet other soil bacteria, which work in a spirit of flat contradiction to that of the nitrifying organisms, and, by decomposing nitrates, give rise to ammonia, which, unless combined with mineral bases, escapes into the air, and so is lost to the soil. In the gigantic stride which he has made during the last 50 years, the bacteriologist solved the old riddle of the fertilising effect of leguminous crops. But in science the last word is never said, and now the zoologist takes a turn in bringing his science to bear on the problem of soil-fertility. As Mr. Hall has pointed out in these pages, and as he indicated in his admirable address before the agricultural sub-section of the British Association at Sheffield, bacteria are not the only micro-organisms which play an important part in determining soil-fertility. In that underworld of life—the foot or so of surface soil—exist large numbers of protozoa, amœba-like, unicellular animals. They feed upon the bacteria, and therefore count in determining the composition of the micro-flora of the soil. To the voracity of the protozoa is due the limitation in numbers of the soil bacteria, and it is by reference to them that the remarkable effects of sterilisation on soil fertility are to be explained. As our readers know, soil heated to the temperature of boiling water yields larger crops than ordinary soil. The explanation of this enhanced fertility, which we owe to Drs. Russell and Hutchinson, of Rothamstead, is strikingly simple. The heat to which the soil is exposed suffices to kill the protozoa and some bacteria. The bacteria which are left are largely of the ammonia-producing type. Freed from rivals

and secure against devouring protozoa, they increase with enormous rapidity, till, within a few days, every grain of soil contains about half a million of these organisms. As a consequence of the exuberant activity of the ammonia-producing bacteria, large quantities of ammonia accumulate in the soil, and the plant, obtaining plentiful supplies of nitrogen, grows apace. Thus, stage by stage, the problem of soil-fertility is being solved, though not yet may the complete solution be held to have been obtained. As the soil is a complex physico-chemical-biological structure, so is its fertility the result of complex and interacting conditions. Nevertheless, horticulturists have reason to be grateful to scientific men for their labours, though, with the wide experience which comes of constant work on the soil, they may not be ready always to hail each new discovery as a solution of all their difficulties.

OUR SUPPLEMENTARY ILLUSTRATION shows a rustic arch covered with the beautiful Rose *Leuchstern* in full bloom. This is one of the most useful varieties of the climbing *Polyantha* Roses, being absolutely hardy and flowering early. Although the flowers are single, they last fresh for a long time, being the best single Rose in that respect. The Supplementary Illustration shows its extreme freeness in flowering. It was introduced to gardens by J. C. SCHMIDT in 1899, and at once became popular. It is more hardy even than *Crimson Rambler*, which it resembles very much in habit and growth, but is not so susceptible to attacks of mildew or red rust disease. It is equally suitable for training on pillars as on archways.

ROYAL HORTICULTURAL SOCIETY.—The next meeting will be held in the Society's Hall, Vincent Square, Westminster, on Tuesday, September 13. A lecture on Roses, by Mr. GEO. PAUL, Jun., will be delivered at 3 o'clock.

—The president and council have accepted the offer of the following prizes from Mr. ROBERT SYDENHAM, for award by them at the Exhibition of Spring Bulbs on March 14 and 15, 1911. Bulbs grown in moss-fibre or similar material (amateurs): Six single Hyacinths in separate vases, not exceeding 6 inches in diameter, to be selected from any one of the following varieties:—*Enchantress*, *Innocence*, *Isabella*, *Jacques*, *Johan*, *King of the Blues*, *Koh-i-noor*, *Ornament Rose*, *Princess May*, *Queen of the Blues*, *Roi des Belges*, *Rose a Merveille*, and *Schotel*. Prizes 21s., 17s. 6d., 15s., 10s. 6d., 7s. 6d. Six vases of Tulips (vases not exceeding 7 inches in diameter) no restriction as to the number of bulbs in a vase, to be selected from the following:—*Duchesse de Parma*, *Fabiola*, *Joost van Vondel*, *Keizerskroon*, *La Reve*, *Mon. Tresor*, *Prince of Austria*, *Queen of the Netherlands*, *Rose Gris de Lin*, *Van der Neer*, *Vermilion Brilliant*, and *White Joost Van Vondel*. Prizes, 21s., 17s. 6d., 15s., 10s. 6d., 7s. 6d. Six vases of Narcissi (vases not exceeding 7 inches in diameter) no restriction as to the number of bulbs in a vase, to be selected from the following:—*Blood Orange*, *Bullfinch*, *C. J. Backhouse*, *Dairymaid*, *Emperor*, *Glitter*, *Horace*, *Leonic*, *Lilian*, *Lulworth*, *Madame de Graaf*, *Red Flag*, *Victoria*, and *White Lady*. Prizes, 21s., 17s. 6d., 15s., 10s. 6d., 7s. 6d.

POETRY OF GARDENS.—Messrs. TRESLOVE & HANSON will shortly add to their well-known series of anthologies a volume entitled *In Praise of Gardens*, compiled by S. J. SHAYLOR. The volume will include most of the notable poetry upon gardens in the English language, and also prose-selections. It will be illustrated with views from famous gardens.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—The KING has been graciously pleased to become patron of the Gardeners' Royal Benevolent Institution, of which his MAJESTY, as Prince of WALES, was formerly president. QUEEN MARY has also been graciously pleased to continue the patronage her MAJESTY accorded to the Institution as Duchess of YORK and Princess of WALES.

"THE BOTANICAL MAGAZINE."—The issue for September, which constitutes Number 69 of the 4th series, gives illustrations and descriptions of the following species:—

RHODODENDRON UNGERNII, tab. 8332.—The district in the Caucasus wherein this plant is found wild is also the home of *R. ponticum* and *R. caucasicum*, the plants being found at different elevations, *R. Ungernii* occupying the middle zone. The plant, from which the illustration was prepared, was raised from seeds received at Kew in 1866, and although it is now a bush about 6 feet high, it has flowered very rarely. Because of this, it is not likely to prove such a good garden plant as its congeners mentioned above. The flowers are very faintly suffused with rose, the individual blooms being about 2 inches across. The plant would probably prove hardy in favoured parts of this country.

CHIRITA RUPESTRIS, tab. 8333.—This beautiful Gesneriad was discovered by Mr. C. CURTIS on the limestone rocks of Lankawi, which lies off the coast of Kedah in the Malay Peninsula. The plant is cultivated at Kew in a moist tropical house, and forms a bushy, compact annual about 2 feet in height, flowering freely during the autumn. It requires a similar treatment to the *Gloxinia*. The flowers are bright blue with a blotch of bright yellow in the throat, and they are $\frac{3}{4}$ inch across.

TRISTELLATEIA AUSTRALIS, tab. 8334.—This is a climbing plant of the Malpigiaceæ, a native of East tropical Africa. It produces pendant shoots, terminated with graceful racemes of yellow flowers, set off with red anthers. The plant grows well in the Palm house at Kew, where it flowers in summer time.

MICROMELES CALONEURA, tab. 8335.—This plant has the appearance, both in fruit and flower, of a *Pyrus*, the small clusters of brown fruit being pear shaped. The species was originally discovered by Dr. HENRY in North Wushan, China, and seeds were sent home by Mr. E. H. WILSON when plant-collecting for Messrs. JAS. VEITCH & SONS. The plants raised at the Combe Wood Nursery of this firm flowered for the first time in 1909, and furnished the material for the plate in the *Botanical Magazine*. The inflorescences are many flowered corymbs with white blossoms.

ALECTORURUS YEDENSIS, tab. 8336.—This is the plant sometimes met with in gardens under the name of *Anthericum yedense*, but after being placed in more than one other genus it has been finally referred to *Alectorurus*. Plants received at Kew from Mr. A. K. BULLY, Neston, Cheshire, prove quite hardy and flowered in July, although not freely. The plume-like inflorescences are a pale rose colour.

PRESENTATION TO A HORTICULTURAL SOCIETY'S SECRETARY.—MR. QUINTIN AIRD, headmaster of Hardgate School, Dalbeattie, and Secretary of the local Horticultural Society, was presented with a gold watch on the occasion of his removal to Howwood, near Paisley; a gold and opal ring being given to Mrs. AIRD. In handing over the gifts, Dr. FREW specially referred to Mr. AIRD's services to the Horticultural Society, of which body he has acted as secretary for eight years. Mr. AIRD has been one of the most successful amateur gardeners of the locality, his exhibits having gained many prizes at the local shows.

APPOINTMENTS FROM KEW.—According to the *Kew Bulletin* Mr. C. K. BANCROFT, B.A., formerly Major Scholar of Trinity College, Cambridge, has been appointed by the Secretary of State for the Colonies, on the recommendation of Kew, Assistant Mycologist in the Federated Malay States. Mr. ALBERT RICHARD GOULD, a member of the gardening staff of the Royal Botanical Gardens, has been appointed by the Secretary of State for the Colonies, on the recommendation of Kew, a Curator in the Agricultural Department of the Gold Coast in succession to Mr. J. ANDERSON, resigned. Mr. WILLIAM LESTIE WOOD, lately a member of the gardening staff of the Royal Botanic Gardens, has been appointed by the Secretary of State for the Colonies, on the recommendation of Kew, Superintendent of Government Plantations in the Federated Malay States in succession to Mr. F. R. LONG, resigned. The *Bulletin* also states that Mr. LEWTON-BRAIN formerly Mycologist and Lecturer on Agriculture to the Imperial Department of Agriculture for the West Indies, and afterwards Assistant Director in the Division of Physiology and Pathology in the experiment station of the Hawaiian Sugar Planters' Association, has been appointed Director of Agriculture in the Federated Malay States in succession to Mr. W. J. GALLAGHER, resigned.

THE FLORENCE INTERNATIONAL HORTICULTURAL EXHIBITION.—An international horticultural Exhibition will be held in Florence during the first fortnight of May, 1911, in celebration of the fiftieth anniversary of the proclamation of the kingdom of Italy. The exhibition, which is to be held under the patronage of the town of Florence and of the Horticultural Society of Tuscany, will receive the financial support of the Italian Government. It will comprise upwards of 450 competitions for ornamental trees, fruit trees, vegetables, forced and preserved fruits, collections of seeds, bulbs and tubers, Colonial plants and their produce, floral art and horticultural industries. Prominence is to be given also to the literature and history of horticulture and to horticultural instruction. Among the prizes offered are valuable "prizes of honour," given by their Majesties the KING and QUEEN of ITALY. All enquiries should be addressed to the Comité Exécutif de l'Exposition Internationale d'Horticulture de Florence.

INTERNATIONAL BRUSSELS EXHIBITION.—The next horticultural show will take place in the Horticultural Hall, from September 24 to 27. To the programme already published has been added classes for Orchids, Dahlias, Roses, Gladioli, and other seasonable flowering plants.

PARIS AUTUMN SHOW.—The International Exhibition of Chrysanthemums, fruit, and vegetables, to be held in the Cours la Reine, Paris, will open on November 4 next, and close on the 15th of the same month. The schedule of prizes, containing full particulars, has just been issued; the classes number 165. There are also details relating to the International Chrysanthemum Conference, organised by the National Horticultural Society of France and the French National Chrysanthemum Society. This gathering will take place in the hall of the former society, at 84, Rue de Grenelle. Seven questions are on the agenda for discussion, viz., suggestion for a pocket edition of the colour chart; the effect of the time of taking cuttings and stopping on bud selection; insects and diseases; damping of the blooms; manuring for outdoor culture; history of the Chrysanthemum; and practical packing of blooms. The time table for members of the Conference is, briefly, as follows:—November 3: 1.30 p.m., Floral Committee Meeting for judging novelties. November 4: 8 a.m., meeting of the

International Jury; 10.30 a.m., opening of the show by the PRESIDENT OF THE FRENCH REPUBLIC; and day, lunch to the jury; in the afternoon, visit to the show. November 5: 9 a.m., first sitting of the Congress; 2 p.m., second sitting; 9 p.m., reception of the members of the Conference. November 6: 8.30 a.m., the members will visit the Luxembourg greenhouses and gardens and the natural history museum, and at mid-day lunch at the Palais d'Orsay, later driving to the Bois de Boulogne and visiting the Paris City nurseries. Applications for tickets for the excursions, accompanied by the sum of 10 francs, should be made to M. G. CLEMENT, 117, Rue de Paris, Vanves, Seine. The Secretary's address is 84 Rue de Grenelle, Paris.

DANGER FROM PLANTS ON WINDOW SILLS.—A defendant at Clydebank Police Court was recently charged with having placed a flower pot on the sill of his window without sufficiently protecting it and preventing it from falling. He pleaded guilty. The flower pot fell from the window and almost struck a woman as she was passing. This was the second case within a short period of flower pots or boxes outside windows in this town falling. The magistrate imposed a modified penalty of 5s. or three days' imprisonment.

"ENCYCLOPÆDIA BRITANNICA." The University of Cambridge has taken over the control and copyright of the *Encyclopædia Britannica*, and will publish a new and complete edition about the end of the present year. This 11th Edition, which has been eight years in preparation, entirely supersedes preceding editions. It will be comprised in 23 quarto volumes, of which the last will be devoted to a full and comprehensive index. It is more than 140 years since the *Encyclopædia Britannica* was first planned by "a Society of Gentlemen in Scotland." The 1st Edition began to appear in 1768, and was completed, in three volumes, in 1771.

"HORTICULTURAL DIRECTORY."—We are asked to state that the editor of the *Horticultural Directory*, 12, Mitre Court Chambers, Fleet Street, London, will be obliged if head gardeners will notify him of any changes of title or address that have occurred since October, 1909.

PITS FOR SOIL-STERILISATION.—In connection with the enhancement of fertility produced by sterilisation of soil referred to in our leading article, it may be mentioned that, according to the *Journal of the Agricultural Department of Victoria* (vol. viii., p. 366), a simple pit for the sterilisation of soil may be constructed as follows:—A shallow pit, 18 inches in depth, is lined with brick—the walls being made of 9 inch brickwork—and divided into two by a single brick partition. The compartments which are used consecutively, each hold about two tons of soil. Steam is generated by a small portable boiler, worked at a pressure of 25-30 lbs., and $\frac{3}{4}$ inch piping leads from the boiler to the pit floor, where it joins with a T piece in each compartment. From the T piece, six pipes are let into spaces in the brickwork floor. The pipes are 8 inches apart, plugged at their free ends, and perforated along their upper sides with 3-16th inch holes 3 inches apart. A tile-drain, covered with cinders an inch below the surface, carries off the water from the condensed steam. Before use, the pipes are covered lightly with sand, the pits are filled with soil, the latter covered loosely with old sacking. Steam is turned on and allowed to pass for 30 minutes after the surface layers of the soil have reached a temperature of 212° F. The steam is then turned on to the second compartment, which in the meantime has been filled with soil.

THE BRITISH FLORA.--The President of the Botanical Section of the British Association, Professor J. W. H. TRAIL, chose for the subject of his address the need for the publication of a comprehensive national flora of the British Isles. He pointed out that, though a great deal of systematic investigation has been done of recent years, there is no one work in which the chief results of this research are collected, and that, as a consequence, the student has to consult large numbers of scattered memoirs before he can obtain the information which he seeks. On these grounds, as well as on the ground that it would lead to further discoveries, Professor TRAIL urges that a well-organized botanical survey of the British Isles should be undertaken, and he gives practical effect to his suggestion by proposing that a committee of the British Association should be appointed to report on the steps necessary for the organisation of such a survey, and preparing materials for a national flora of the British Isles.

PUBLICATIONS RECEIVED.--*The Upper Garden*, by Robert de la Condamine. (London: Methuen & Co.) Price 5s.--*The Gardeners' and Poultry Keepers' Guide and Illustrated Catalogue*. (London: W. Cooper, Ltd.) Price 2s. 6d.--*Appar's Ornamental Shrubs of the United States*, by A. C. Apper. (New York: American Book Company.)--*The Estate Magazine*. (London: Spottiswoode & Co., Ltd.) Price 6d.--*Board of Agriculture and Fisheries*. Leaflet No. 239, Pear Leaf Blister Mite; Leaflet No. 231, Cheese-Making for Small Holders. (London: 4, Whitehall Place, S.W.)

THE "RUINED" ARCH AT KEW.

THIS antique-looking structure (see fig. 80), suggestive of the Roman period, is situated not far from the "North" Gallery of paintings. It spans the path leading from the Cumberland Gate to the Lion Gate, the walk being almost parallel with the wall bounding the gardens next to the Kew Road. The arch was designed by Sir William Chambers, and built in 1759-1760, a year previous to the erection of the Pagoda, which is also the work of the same architect. In addition to its ornamental character, the structure was formerly used as a bridge by carriages entering the gardens from the Kew Road. It consists of three arches, a large central one and two smaller ones situated one on either side. The last-named were originally closed, forming cells, which were entered by doors in the sides of the central arch. The whole is built of brick faced with stone, and time has given to the structure the air of antiquity sought by the designer. As can be seen in the illustration, a considerable portion is clothed with Ivy, while evergreen shrubs, notably Box, and several stately Elm trees, which tower above it, add to the dignity of Chambers's Ruined Arch.

NOTES FROM A "FRENCH" GARDEN.

WE are now commencing the year's work afresh. The seeds sown at this time will furnish the main crops for the spring operations. The sowing of the seeds and the handling of the young plants require great care, as disease is often prevalent at this time of the year. The young Cabbages are ready to be transplanted in frames set in a well-drained part of the garden. They are covered with the lights in wet weather. A batch of Cauliflowers is sown in frames set on pots or bricks and covered with lights. When a great number of plants is required in the spring, another sowing is inserted a fortnight later. The variety Early London is a suitable sort for forcing on hot-beds where Cauliflowers

are required early in May. For market purpose, I prefer the "Driancourt" and "Lénoir," as these varieties form large curds, which keep firm for a few days before bursting. They are generally ready for cutting late in May or early in June.

The Lettuces sown in August are now being pricked out 30 per cloche. A little ventilation may be afforded when the plants are well established. The ground is being prepared now for their final planting. In heavy soils, the bed should be formed with a good slope to the south to throw off the excessive moisture in October and November. Advantage should be taken of

Those who intend to make cold work a feature of the spring cropping should choose for the purpose the white-seeded variety of Lettuce "Little Gott," which bears the sun better than the "Little Gott" (black seed).

The experience of this year's cold work has demonstrated that the Lettuce "Little Gott" is more remunerative than the variety "White Passion," as this latter sort requires hearting in the open, and the removal of the glass early in April greatly impedes the growth for two or three weeks—a great loss at that time of the year.

The ground intended for the transplanting of



FIG. 80.—THE "RUINED" ARCH IN KEW GARDENS.

the fine days in this month to prepare the ground for the growing of Lettuces during the winter. The beds are made 4 feet 6 inches wide, and accommodate three rows of cloches. Paths 12 to 18 inches in width are allowed at this time of the year between each bed. The decayed manure from the old hot-beds is well broken up and passed through a screen with a half-inch mesh: it will be used as a top dressing when transplanting the seedling Lettuces. If it is intended to form hot-beds early, a few seeds of Lettuce "Little Gott" may be inserted within a week: the seedlings should be pricked out before the end of September.

the Onions must be prepared at an early date, so that the transplanting may be finished before October 6 or 8, when the planting of the Lettuce seedlings commences.

The main batch of Celery Chemin is now blanched by spreading mats on the beds. When the plants are touching one another, it is advisable to only cover the outsides of the beds to prevent decay. In wet weather, Celery must be frequently examined, and the heads sent to market as soon as they are ready.

The autumn sown batch of Carrots will soon be ready for pulling, and must be thinned again if necessary. P. Aquinas.

TREES AND SHRUBS.

MORTALITY OF TRANSPLANTED CONIFERÆ.

MR. PERCY GROOM on p. 115 writes:—"It would be interesting to have the experience of gardeners as to the relative mortality in the transplanted evergreen, hardy species belonging to the two classes," i.e., Coniferæ and broad-leaved dicotylous trees. In confining the comparison to evergreen trees of each class, one is confronted by the difficulty that beyond Coniferæ we have no hardy evergreen trees in this country except the evergreen Oaks, of which *Quercus Ilex* is the only truly hardy species, and such small trees as the Holly, Yew, and perhaps Box. There is no need, however, to confine the comparison with respect to mortality after transplantation to evergreen trees, and a comparison can as accurately be instituted between Coniferæ and evergreen shrubs. It will be necessary, however,

One year.—*Cedrus atlantica* var. *glauca*, *Cupressus* of the true Cypress section, such as *C. sempervirens*, *C. macrocarpa*, &c., *Cryptomeria*, *Libocedrus*, *Pinus Laricio*, *Sequoia*, *Tsuga Mertensiana*.

Two years.—*Abies*, *Cedrus*, *Cunninghamia*, *Cupressus* of the *Chamaecyparis* section, *Juniperus*, *Pinus*, *Pseudolarix*, *Pseudotsuga*, *Sciadopitys*, *Taxodium*, *Thuja*, *Tsuga*.

Three years.—*Araucaria*, *Larix*, *Picea*, *Pinus* (the *Strobus* section).

It will be noticed that certain plants are mentioned under two or three headings, but, as I have stated above, there is a difference in the species or varieties of a genus as well as between the various genera. For example, *Cedrus atlantica* var. *glauca* will not stand more than one year without being transplanted, while the other members of the genus can be left for two years. When Conifers have attained a height of 6 feet or more, and have been regularly transplanted, they

The same size (2 feet to 6 feet) may be used, but where the plant does not reach the latter height, the comparison will still hold good in point of age according to its size.

One year.—*Arbutus*, *Azara*, *Berberis Darwinii*, *Cotoneaster microphylla*, *Photinia*, *Quercus* (evergreen), *Ulex*.

Two years.—*Berberis* (evergreen), *Camellia*, *Cistus*, *Escallonia*, *Ilex*, *Laurus nobilis*, *Laurel* (common), *Laurel* (Portugal), *Olearia*, *Phillyrea*, *Veronica*.

Three years.—*Aucuba*, *Buxus*, *Ligustrum*, *Osmanthus*, *Skimmia*, *Taxaceæ*.

It will be noticed that *Rhododendron*, *Kalmia*, and other Ericaceous subjects are not given in the above list, but these all transplant so readily at any size that they can hardly be included. If we compare the two lists given above we find that there is practically little difference between Coniferæ and other hardy trees and shrubs so far as regards the rate of mortality after transplanting. There is the same impatience of removal with many plants in either series, and also the same readiness to recover after transplanting with other subjects. Again, in both lists those plants that will not stand more than two years are in the majority, so that, on the whole, the two series may be said to be practically alike for the purpose of comparison with regard to mortality after transplantation.

The whole subject of transplanting, however, is a very complicated one, and there is always something new to learn about it. It may be said to consist of a few general rules to which one is always finding exceptions. *J. Clark, Bagshot, Surrey.*

ERIGERON MUCRONATUS.

THIS pretty but unassuming little plant was formerly known by the name of *Vittadenia triloba*, but the above is now held to be its correct title. It is a small, modest plant, but is unsurpassed in the open garden for the length of its blooming period. In the south-west, its first flowers expand in March. It continues to bloom all through the summer months, may often be seen in full flower in November and, if no hard frosts occur, it sometimes carries blossoms until the New Year. It is a native of Mexico, but the horticultural dictionaries are silent as to the date of its introduction into this country. It is popularly termed the Mexican Daisy, and appears perfectly hardy as far north as Worcestershire. It increases itself very rapidly from self-sown seedlings, and the places where these appear are often remarkable. An old brick wall in a neighbouring garden has its coping and face almost entirely covered with tiny plants of this *Erigeron*, the produce of self-sown seed, and in the mortar between the bricks they remain in perfect health. Though they are very small and make but little growth, yet they bear minute flowers in profusion. Seedlings may also be found in the mortar of walls not more than seven years old. The wall-tops in many gardens are covered with this little plant, and in my garden, where I had but one plant, the top of a wall, 12 feet in height, is lined with strong plants for a length of many feet, these forming a flowering fringe all along the summit of the wall, and having a very pretty effect for many months in the year. Where it thus reproduces itself so freely, it is scarcely worthy of a place in the border, though, as may be seen from the accompanying illustration (fig. 81), it is decidedly decorative when planted in a rough stone edging, which it will smother with flower in April, May, and June, and well into the autumn. The Daisy-like flowers are each about three-quarters of an inch in diameter, and are pink when they first expand, gradually becoming white as they age. *Wyndham Fitzherbert.*



[Photograph by Wyndham Fitzherbert.]

FIG. 81.—ERIGERON MUCRONATUS AS AN EDGING PLANT: COLOUR OF FLOWERS, PINK.

before comparing Coniferæ with other subjects to note the behaviour of various Conifers in this respect, as there are great differences between the genera, and sometimes between the species of a genus, as regards their death-rate after being transplanted. In the following list, account is taken of Conifers from 2 feet to 6 feet in height, as from the seedling, grafted, or cutting stage up to about 2 feet practically all Coniferæ are best transplanted annually, and we make it a rule to do so. The only exceptions are *Picea pungens* and its var. *glauca*, *Pinus austriaca*, *P. Cembra*, and *P. sylvestris*. These can be left for two years, and be moved without any fear of the loss being, even in exceptional cases, more than five per cent. The heading one year, &c., means that, to have a fair chance of living after being transplanted, the plants mentioned below should not remain longer than that time without being moved.

will stand for another year or even two years longer than the time given above, and still have a fair chance of living, as they then hold a good ball of soil, and the roots are not checked so much by the move as when all the soil falls away from them as soon as the plant is lifted. To show how the behaviour of transplanted Conifers varies, we may note the genus *Pinus*. *P. Laricio* (the Corsican Pine) is a bad subject to move at almost any age and size, and requires catching at just the right time to ensure even moderate success; *P. austriaca* (the Austrian Pine), a variety of *P. Laricio*, can be transplanted with safety at almost any time, provided that it has not been standing more than three years; while *P. Cembra* and practically all the five-leaved Pines will move with perfect safety at any size, even if they have not been transplanted for four or five years.

Turning to hardy evergreen trees and shrubs other than Coniferæ, we get the following list.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

GRAPES AT SHREWSBURY (see p. 185).—May I be allowed to correct a slight error in the notes by *Paris* on "Grapes at the Recent Shrewsbury Show" in the last issue? The variety Buckland Sweetwater was awarded the 1st prize in the "any other white Grape" class, and not Chasselas Napoleon. *Alfred Child, Catesby House Gardens, near Daventry.*

YUCCA FILIFERA.—A specially fine plant of this *Yucca* is illustrated on p. 401 of the *Revue Horticole*. The plant is a splendid and probably unique specimen (at all events in Europe) of this interesting member of the Liliaceae, showing the fine dimensions to which this plant can grow under favourable circumstances. The tree was planted in 1869 at Saint Aunès in Hérault, France, and is now more than 21 feet in height, or 6 metres 70 centimetres according to French measurement. It is a splendid four-branched tree with handsome pendulous racemes of pure-white flowers hanging from the end of each branch. The plate is accompanied by a long and detailed description of the plant by M. Charles Cochet. *W. E. Gumbleton, Belgrove.*

MANETTI STOCK FOR ROSES.—There has been much said against the Manetti stock, but Hybrid Perpetual Roses do grandly upon it, and not so very long since it was largely employed for grafting pot Roses of the Tea Scented section. The Manetti makes a better stock for pot Roses than for plants growing in the open, and should not be ignored. It is not so coarse rooted in pots, and, being earlier and quicker in its root action, I prefer it for grafting the Hybrid Perpetuals. Plants growing upon this stock very quickly form new roots, and when they are lifted early, potted at once, and started into growth steadily, it gives satisfactory results. The point is to keep the wood plump by syringing if rains and night dews are not sufficient. Roses upon the Manetti stock also ripen sooner in the open, and are considerably cheaper to purchase, although they are not quite so long-lived as those upon the Briar. *Rose Grower.*

POLLINATION OF MELONS (see p. 140).—The artificial pollination of Melons is not a necessity for the fruits to set, especially when the plants are grown under proper conditions. The humidity of a Melon-house, although admirably suited to the growing of the bine, is not favourable to pollination, for two reasons, (1) the pollen grains are not sufficiently dry to be readily disseminated, (2) the plant has not that firm, hard constitution which one grown in a frame possesses. I have proved that plants grown on the extension system do not (specially some varieties) set their fruits so readily as plants that are stopped early, and continued up the trellis with three or more growths. Insects have easier access to the flowers in frames, therefore pollination is more certain, hence the simple matter it is to produce crops under this method of culture. It is also more natural, the bine trailing on the ground, from which it derives a considerable amount of nutrition. But some varieties, under either condition of culture, do not set their fruits freely, and this is attributable to the formation of the flower. Most gardeners believe that the age of the seed influences the period of fruiting, plants grown from two and three-year-old seed being more precocious. There is one point I take exception to in Mr. Foster's remarks on p. 140. He states: "Those fruits which are left to swell after their own natural manner produce only seeds that the grower would term flats." Then he goes on to say: "Fertilisation does not affect the weight of the fruits grown." This is conclusive in saying that fertilisation decreases the weight of the flesh, and non-fertilisation increases it, because, in the former case, the seeds certainly weigh something; whereas, in the latter case, they can be blown away, and must weigh insignificantly. But this raises the point, Can a Melon fruit swell without being fertilised? What difference is created, and how is it created if pollinated by hand, insect agency, or not at all?

My experience of Melon-growing, and I have produced 500 fruits in one season, is that the fruits do contain seeds that will reproduce themselves, but in what ratio to an artificially-fertilised fruit I have not interested myself to prove. Mr. Foster states further: "To demonstrate to the Editors the freedom with which Melons will grow unaided, I enclose a branch of a second crop of fruits that have set and grown away while two later fruits of the first crop were maturing." This is a very ordinary occurrence, and why and how is it? It proves the prolific variety, and also the surroundings are made natural for self fertilisation by the admission of more air, hardening the growth, and favouring pollination by insect agency. One famous Melon grower whom I served under ripened two and three crops of Melons from the same plants. This system I was not so fortunate with, but my usual practice was to cut perfectly ripe fruits in 12 weeks from sowing the seed. *W. H. Clarke.*

WHERE ARE THE WASPS?—Doubtless some of your readers could give good reasons why there is such a scarcity of wasps this season. I have never seen so few. For the last 20 summers wasps have been the plague of my life. Each season they have destroyed half the fruit in the garden, and have made it impossible for us to eat our meals in comfort. Scarcely a season has passed without my destroying 50 to 60 nests with cyanide of potassium in the garden and farms here. In the spring we killed a large number of queen wasps. I have also seen very few bees this season. Is that the reason why our flowers of Scarlet Runners have failed to set? *Thos. Oldham, Stoughton Grange Gardens, Leicester.*

ARGEMONE GRANDIFLORA (see pp. 136, 138).—I am forwarding two specimens of Argemone. The seeds, sown about the beginning of April in the open ground in rows, about 12 inches apart, germinated very slowly, the seedlings not appearing before the middle of May. They grew slowly, and were thinned out to 12 inches apart. About the middle of July, the first flowers opened, and from that time the growth of the plants was more rapid. At present, the plants have attained a height of 5 feet, and the beds are covered with the clear, white blooms, which will continue until the plants are killed by frost. Argemone grandiflora would be cultivated more extensively if its beauty were better known. *Fredrick Roemer, Quedlinburg, Germany.*

EARTHWORMS AND SLUGS.—The notes on earthworms in the *Gardeners' Chronicle* for September 3 and August 27 are very interesting. Can any reader tell me of what use or value the slug (*Limacidae*) is? Whilst trenching in these gardens during the past spring, I came across several slugs recovering from their winter rest each with the end of an earthworm in its mouth, which I noticed they swallowed or sucked down whole, lengthways into their stomachs. After watching a slug swallow an earthworm, I caught the slug, killed it, and opened its body, when the earthworm was found whole inside the slug. This proves that the slug is an additional hindrance to plant life, as the earthworms help to fertilise the soil. *Wm. Perry.*

WHAT THE EARTHWORM DOES (see pp. 157, 186).—From a series of experiments conducted in Russia, it has been proved that the earthworm plays an important part in keeping up the supply of available phosphorus in the soil. In one set of tests, alternate layers of different kinds of soil were placed in boxes having glass on one side for purposes of observation. In these layers earthworms were placed, the soil being kept in a suitable condition of moisture, so that the worms worked as naturally as they would in the open ground. The experiments lasted a year, at the beginning and end of which time analyses were made to determine the results. A check test was made by providing other boxes of soil identical in every respect, except that no earthworms were placed in these. In the soils worked over by the worms the soluble phosphoric acid was found in all cases to be greater than in those not worked by the worms. Here we have a discovery which appears to be of no small importance, and perhaps Mr. Willis may be inclined to experiment on the lines indicated, for in his able article, which appeared in the *Gardeners' Chronicle* for August 27, p. 157, it was stated

that the humus formed under the influence of earthworms "is always of a neutral character and never acid." The experiments referred to seem to show that the earthworm in passing the earth through its body uses some kind of an acid which renders the phosphorus of the soil soluble. It was also discovered that the nitrogen content of the soil was more evenly distributed through the soil at the end of the experiment than at the beginning, and that the humus of the upper soil is carried downward by the earthworm. Thus, without the work of the earthworm, all the humus that has accumulated through centuries by the decay of plant and animal life on the surface of the ground would never have been so well mixed with the soil. When one takes into account the long ages in which the earthworms have been at work, an idea is obtained of the great part they have had in the preparation of the earth for the use of man. The earthworm may be classed as an apparently insignificant agent which has had much to do in making the soil more productive. *F. J.*

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

AUGUST 30.—*Present:* Mr. E. A. Bowles (in the Chair), with Messrs. A. W. Hill, J. Fraser, J. W. Odell, Wm. Hales, G. Gordon, W. Fawcett, A. Worsley, and A. W. Sutton.

Garden warblers attacking Plums.—Mr. WORSLEY said that garden warblers were this year attacking the ripening Plums on the trees, contrary to their usual habit. Mr. GORDON suggested that this may be due to lack of insects—their usual food—this season, and instanced an experiment with hawks whose tastes he had trained till they preferred fruit as a food.

Aberrant branching in Mentha.—Mr. FRASER showed a plant of *Mentha gentilis variegata* bearing one pair of leaves united by their petioles and half the edges of the lamina. The axillary branches were also lateral, following the leaves. The main axis was at right angle to its base, flattened above and convex beneath like a petiole. Then it bore one leaf with an axillary shoot, and then the axis resumed its upright position with opposite, decussate leaves. Three nodes below also had a single or twin-leaf on one side, and one lateral branch behaved in the same way.

Petaloid calyx in Rose.—A specimen of Rose *Eugenie Lamesch* was also submitted by Mr. FRASER, to show phylloid sepals and median proliferation of the flower. The axis in the centre of the flower was prolonged, bearing another flower-bud.

Oncidioda × Charlesworthii.—The first cross of an *Oncidium* with *Cochlidia* (*O. incurvum* × *C. Noezliana*) was shown by Messrs. CHARLESWORTH, of Haywards Heath. The specimen submitted was one of several of the same raising, all of which showed the same characteristics and colouring. A Certificate of Appreciation to Messrs. CHARLESWORTH was recommended.

Rhododendron ponticum.—Mr. BOWLES showed a terminal bud of *Rhododendron ponticum*, the leaves having petaloid colouration.

Adventitious root of Plane tree.—Mr. WILKS sent an adventitious root of a Plane tree which he had found penetrating a straw stake-band 6 feet from the ground. It was thought that the moisture which had been held by the band had induced the formation of the root.

Grapes.—A sample of Muscat Grapes was submitted from Colonel TURNER, of Pinkney Park, which showed cracking and decay at the point of union of berry and stalk, and the leaves were badly spotted. It was agreed that the defects were due to too low a temperature in the house, with insufficient ventilation.

Decayed Montbretia foliage.—Some Montbretias, Irises and Gladioli having decaying foliage were sent by Mr. EDWARD HALL, of Leamington Spa. The bulbs and corms were apparently in good health, without traces of disease. Many similar specimens had been lately received, but up to the present no explanation of the trouble was forthcoming.

DUMFRIES AND GALLOWAY HORTICULTURAL.

AUGUST 31.—The annual summer show of the Dumfriesshire and Galloway Horticultural Society was held in the Drill Hall, Dumfries, on this date, the opening ceremony being performed by Major-General Sir Geoffrey Barton, K.C.V.O., C.B., of Craigs. Despite the unfavourable weather, the hall was well filled with a good display of excellent horticultural produce, the pot plants being the most deficient in point of numbers, although the quality was high in the majority of cases. Cut flowers were inferior in quality to those of last year, with the exception of the hardy herbaceous plants, which were very fine, but this was evidently due to the weather, traces of this being apparent in many of the classes. Vegetables were excellent, and fruit was very good, several noted growers competing.

In the open classes, which were not numerous, J. WYLLIE, Esq., Elmbank, Dumfries (gr. Mr. Jas. Henderson); Messrs. J. & W. TWEEDIE, Mosswald, Dumfries; and Mr. D. J. MAXWELL, Newtownards, won the leading prizes.

T. RANKIN, Esq., Dalswinton (gr. Mr. R. A. Grigor), was awarded the Dumfries Corporation Challenge Cup for a table of plants: the trophy now, we are informed, becoming the absolute property of the exhibitor.

The competition for plants in pots was limited, but there were few poor plants shown, and some very good stove or greenhouse Ferns and early Chrysanthemums were noteworthy. Mr. RANKIN led for stove or greenhouse plants; 2nd, J. DAVIDSON, Esq., Summerville, Dumfries (gr. Mr. J. Wilson). Mr. RANKIN also excelled with Petunias, Tuberous Begonias, stove or greenhouse Ferns (a very fine plant of *Adiantum farleyense* being among the lot), table plants, Zonal Pelargoniums, and greenhouse plants in flower. Mr. DAVIDSON, Mr. WYLLIE, and two amateurs, Mr. J. L. ARMSTRONG, Dumfries, and Mr. D. J. MAXWELL, Newtownards, were also successful in these classes.

In the cut flower classes, the leading features were hardy herbaceous flowers and Sweet Peas. Of the former the chief class was for a collection of 20 sorts, the prizes being offered by Messrs. T. Kennedy & Co. There were five exhibits, and Mr. J. DAVIDSON won the 1st prize with a good collection; 2nd Colonel MAXWELL WITHAM, C.B., Kirkconnell, Newabbey (gr. Mr. Jas. McGill). In the other leading class for these flowers, Colonel GORDON, Threave, Castle Douglas (gr. Mr. Jas. Puff), was placed 1st; Colonel MAXWELL WITHAM being 2nd. The Sweet Peas showed the effects of the season, but the 1st prize display in the class for Messrs. Service's Silver Cup, exhibited by J. RANKIN, Esq., Dalswinton, were excellent; 2nd, Mr. J. J. TWEEDIE, Broombush, Lockerbie. The other leading winners in the cut flower section were Colonel GORDON (gr. Mr. J. Duff); J. WYLLIE, Esq. (gr. Mr. Jas. Henderson); T. RANKIN, Esq. (gr. Mr. R. A. Grigor); J. H. M'GOWAN, Esq., Ellangowan, Dumfries (gr. Mr. E. W. Pritchard); H. KESWICK, Esq., Cowhill Tower (gr. Mr. C. Murray); Mr. D. WHITELAW, Lochbarbriggs; Mr. W. ANDERSON, Collin; Mr. D. J. MAXWELL, and Messrs. J. & W. TWEEDIE.

In the fruit classes, Grapes were of outstanding quality. For a collection of fruits, Major W. MAXWELL, Glenlair (gr. Mr. B. Rutherford), was 1st, Colonel GORDON being 2nd; both having very creditable exhibits. Major MAXWELL was also placed 1st for Black Hamburg Grapes and Melons. Colonel GORDON was 1st for black Grapes, white Grapes, Peaches, Plums, dessert Apples, baking Pears, and Cherries. Mr. RANKIN was 1st for Muscat Grapes with best bloom and dessert Apples, and Mrs. KAY, Drumpark (gr. Mr. W. Scott), was 1st for Nectarines and dessert Pears.

Vegetables were among the finest produce of the show. For the collection, four very good exhibits were staged, and the 1st prize, after prolonged consideration, was given to Colonel GORDON, although some of his vegetables were larger than some would choose for the table. Mr. RANKIN was placed 2nd and Mr. KESWICK 3rd. In the other vegetable classes the leading prize-winners were Colonel GORDON, Mr. RANKIN, Mr. WYLLIE, Mrs. KAY, Mr. J. H. M'GOWAN, Mrs. CARRUTHERS, Portrack (gr. Mr. W. Brown), and Colonel MAXWELL WITHAM.

Amateurs showed well, as a whole, and the competition in these classes was better than usual.

Non-competitive exhibits were displayed by Messrs. T. KENNEDY & Co., Dumfries, who exhibited a large table of flowering and foliage plants in front of the platform, together with an effective design on the floor of the hall, also cut flowers of many kinds and fruits. Messrs. JAS. SERVICE & SONS, Dumfries, arranged a good group of flowering and foliage plants on the floor; and Messrs. T. SMITH & SONS, Rose Growers, Stranraer, sent out blooms of new and old varieties of Roses.

CHESTER FLOWER SHOW.

AUGUST 31.—This exhibition was held on the Roodee, under the auspices of the Cheshire Agricultural Society. The exhibits were fully up to the average in number, and the attendance was satisfactory, the marquees being crowded during the afternoon.

Groups of plants are generally of fine quality at this show: this year brought four competitors who staged in good form throughout. A. ASHWORTH, Esq., Gresford (gr. Mr. W. H. Shaw), was awarded the 1st prize, showing well-coloured *Codiaeums* (Crotons) and *Caladiums*, well-grown Palms and well-flowered *Ixoras*, all suitably arranged; 2nd, Major MCGILVERDY, Bache Hall (gr. Mr. E. Stubbs); and 3rd, JOHN R. SAMUEL, Esq., Shotwick.

In the class for six stove or greenhouse plants, not fewer than three in flower, ALFRED TYLER, Esq., Plas Newton (gr. Mr. A. Ellams), led with medium-sized plants; J. R. SAMUEL, Esq., and E. P. JONES, Esq., Chester (gr. Mr. W. Reeves), were placed 2nd and 3rd respectively.

For four Ferns, the prize-winners were:—1st, J. R. SAMUEL, Esq.; 2nd, Mrs. BUTT, Chester (gr. Mr. E. Palin), and 3rd, A. E. HALL, Esq., Chester (gr. Mr. J. Williams).

Mr. A. ELLAMS won in the class for four Pelargoniums, having well-flowered plants.

The best single specimen plant, a small *Dipladenia*, was shown by C. H. CREASEY, Esq., Birkenhead; 2nd, Mr. J. A. SAMUEL.

Mr. H. COATE won the 1st prize for 12 *Cactus Dahlias* with charming flowers of William Marshall, Killarney, Canadae and others. For six blooms of these flowers, G. F. H. ROBERTSON (gr. Mr. E. Jones) was the winner of the 1st prize.

Mr. J. BREEN won the 1st prize in the class for 12 Asters; and for six varieties of annuals, P. L. YORKE, Esq., Erddig Park (gr. Mr. G. Aitkens), led with good bunches. The best 12 bunches of hardy herbaceous flowers were shown by Countess GROSVENOR (gr. Mr. F. England), and the best six bunches by Mr. E. STUBBS.

For 12 distinct varieties of Sweet Peas, Mr. E. JONES won the 1st prize with good flowers, none of them being named; for six varieties, Mr. G. FAULKNER, Rowton, led, having Sunproof Crimson, St. George, Asta Ohn, Evelyn Hemus and other popular kinds. This exhibitor also won the 1st prize in the class for six varieties.

Mr. G. ROLT, Christleton, led in the class for 12 Roses with bright blooms, the best being Frau Karl Druschki, Hugh Dickson, and Killarney. For 12 *Gladioli* Mr. E. JONES led.

Fruit as usual was good; the 1st prize for nine dishes was won by EGERTON LEIGH, Esq., Holmes Chapel (gr. Mr. H. Bateman); he had good Black Hamburg and Muscat of Alexandria Grapes, Peaches Sea Eagle and Bellegarde, Nectarines Pineapple, Melon Royal Sovereign, and other kinds.

The best two bunches of black Grapes were shown by Sir GEORGE MEYRICK, Bart., Bodagan (gr. Mr. W. Pilgrim), in well-coloured bunches of Madresfield Court; for two bunches of white Grapes J. G. FROST, Esq., Chester (gr. Mr. J. Clark), excelled, having Muscat of Alexandria.

Peaches were best shown by Mrs. M. CLOVER, Willaston (gr. Mr. A. Crisp), and Nectarines by Mr. E. JONES with highly-coloured fruits of Pineapple.

G. R. DARSIE, Esq., Newton House (gr. Mr. J. Dean), staged the best Melon.

Mr. G. AITKENS led for a collection of hardy fruits.

Mr. A. J. BLAIR, Basford, won in the open class for table decorations, and Mr. E. JONES in the class restricted to exhibitors living within a 10-mile radius of the exhibition.

VEGETABLES.—Messrs. Sutton & Sons offered prizes for a collection of six kinds. Mr. F. STUBBS won the 1st prize. For Messrs. CLIBRANS prizes, offered for a collection, Mr. J. EDWARDS, Winstay, was the 1st prize-winner; for Messrs. Webb's prizes, Mr. J. TOMLINSON, Whitegate, showed best; and for Messrs. Dickson & Robinson's, Mr. R. WALKER, Ringway, was the 1st prize-winner.

In the single dishes the 1st prize-winners were: Mrs. WALKER and Messrs. J. WESTON (four), C. PARKER (two), J. TOMLINSON, W. REEVES, J. EDWARDS, J. TAYLOR, A. WATKINS, E. P. SMITH, W. CARTER, F. SNELL, and J. DEAN.

The following firms staged exhibits not for competition:—Messrs. DICKSONS, Chester, Libanus, Phloxes, Roses and other flowers; Messrs. CALDWELL & SONS, Roses, Dahlias and herbaceous flowers; Messrs. DICKSON & ROBINSON, herbaceous flowers; Messrs. CLIBRANS, fruits and vegetables.

SANDY FLOWER SHOW.

AUGUST 25.—The 42nd annual show of this society was held under fine conditions in the beautiful park of Somdye Place. Sandy is situated where the G.N. and L. & N.W. Railways cross, this offering good facilities for visitors, the show attracting more than 11,000. There were many fine groups of plants shown, especially in the class for a group of plants to cover 150 square feet. The competitors in the largest class were Sir G. H. KENRICK (gr. Mr. J. V. Macdonald), Messrs. J. CYPHER & SONS, Cheltenham, and Mr. W. VAUSE, Leamington, the prizes being awarded in this order. Mr. Macdonald is to be congratulated on his achievement, as it was his first attempt at this show. His scheme included an artificial bridge, covered with virgin cork, in the centre of the group, and this was draped with *Lycopodium caesium*. The background was made up with tall Bamboos, well-coloured, single-stemmed *Codiaeum Warrenii*, and crowned with a large *Kenna Palm*, which was rather yellow for so prominent a position, but this defect was obliterated a little by a mass of *Lilium speciosum* at the base. Other notable plants in this group were *Oreodendron* and *Fuchsia trophylla*, which was effectively used under the bridge. The 2nd prize group, shown by Messrs. J. CYPHER & SONS, left little to be desired, and highly maintained the reputation of the firm; every individual plant in this group was in splendid condition, and was placed to advantage. The chief features in this group were the numerous varieties of Orchids in the foreground. The 3rd prize group was also meritorious.

In the class for 10 stove and greenhouse plants, Messrs. JAS. CYPHER & SONS were awarded the 1st prize, and Mr. W. VAUSE the 2nd; but the positions were reversed in the class for six foliage plants. The class for a group of plants occupying an area of 75 superficial feet was contested by Miss FITZPATRICK (gr. Mr. H. Tyson) and Sir CHARLES HAMILTON, Bart. (gr. Mr. T. W. Birkinshaw). The former exhibitor's group was exceptionally well arranged; *Amaryllis* were well shown, also *Acalypha hispida* in the background, and *Caladiums* in the foreground. The group was awarded 1st prize. Miss FITZPATRICK won the 1st prizes in the other classes for specimen plants.

Fruit and vegetables were staged in a separate tent. The 1st prize for six dishes of fruit was won by Sir C. HAMILTON (gr. Mr. T. W. Birkinshaw). This exhibit was very meritorious, black and white Grapes being very fine. The same gentleman won in the class for Black Hamburg; 2nd, Marquis of NORTHAMPTON (gr. Mr. A. R. Searle); 3rd, G. D. NEWTON, Esq. (gr. Mr. C. Cousins). For black Grapes, not Hamburgs, Sir C. HAMILTON was again placed 1st, with Ahwack Seedling; Mr. J. W. WRIGHT 2nd; and the Marquis of NORTHAMPTON 3rd. Sir C. HAMILTON was awarded 1st prize for Muscat of Alexandria; 2nd, A. J. THORNHILL, Esq. (gr. Mr. T. Lockie). For any other white Grapes, the 1st prize was won by the Marquis of NORTHAMPTON, with Bowood Muscat; 2nd, J. BRISCOE, Esq. (gr. T. Todd). The best Peaches and Nectarines were shown by Mr. THORNHILL; the best scarlet-fleshed Melon by the Marquis of NORTHAMPTON; and the best green-fleshed Melon by Sir C. HAMILTON.

ROYAL CALEDONIAN HORTICULTURAL.

SEPTEMBER 7, 8.—The autumn show of this Society was held in the Waverley Market on these dates. Compared with the Centenary Show of the previous year, held in the same month, there was a considerable falling off in the number of entries for fruit and a slight decrease in those for plants, but there were more competitors in the vegetable and cut-flower classes. The total entries showed a decrease of over 160 as compared with 1909. The quality of the exhibits, however, was of the high standard usually seen at these shows, and in some of the fruit classes, notwithstanding the bad season in most parts of the country, it was very high. The Grapes shown in the Challenge Trophy class were probably as fine as any seen at these shows. On this occasion, too, the traders made a splendid display, so that the large Market House, which covers about an acre and a quarter, was very fully occupied.

FRUIT CLASSES.

(Open to Gardeners and Amateurs.)

There were four entries in the class for a table of dessert fruit, as compared with two in 1909. The tables were, as usual, 10 feet by 4½ feet, and decorated with plants or cut flowers, or both. Not more than 16 dishes of fruit could be shown, and these had to be selected from a list published in the schedule. Separate prizes were awarded for fruit and for decoration. The 1st prize of £5 for fruit was awarded to the Duke of PORTLAND, K.T., Welbeck, Notts. (gr. Mr. J. Gibson); the 2nd of £3 10s. to the Earl of HARRINGTON, Elvaston Castle, Derby (gr. Mr. J. H. Goodacre); and the 3rd of £2 to WHITE-LAW REID, Esq., Wreth Park (gr. Mr. Geo. McKinley); while for decoration the positions of the 1st and 2nd prize winners for fruit was reversed. The pointing in the 1st prize exhibit was as follows:—

	Maximum Points.	Points Awarded.
Apples (1)	7	5½
Apples (2)	7	5
Figs (1)	7	6
Figs (2)	7	5½
Grapes, Black (1) ...	9	7½
Grapes, Black (2) ...	9	7
Grapes, Black (3) ...	9	6½
Grapes, White (1) ...	10	7
Melon (1)	8	7
Melon (2)	8	6½
Nectarines (1)	8	6
Nectarines (2)	8	6
Peaches (1)	8	6½
Peaches (2)	8	6
Pears (1)	8	7
Pears (2)	8	6
	129	101

The points awarded for decoration were 21½ out of a possible of 28. The Grapes shown were (white) Muscat of Alexandria, (black) Madresfield Court, Muscat Hamburg and Prince of Wales (one bunch of each); Peaches Dymond and Royal George; Nectarines Humboldt and Pineapple; Melons Green Gem and Universal; Figs Negro Largo and Brown Turkey; Pears Souvenir du Congrès and Marguerite Marillat; Apples Cox's Orange Pippin and Ribston Pippin.

The points awarded to the Earl of HARRINGTON were for fruit, 97½, and for decoration, 23; and to WHITE-LAW REID, Esq., for fruit, 80½, and for decoration, 17. In the decoration of the 1st prize exhibit, Montbretias were the leading feature, while Liliun lancifolium was the chief flower used in the 2nd prize group, and Carnations in the 3rd.

For the collection of 12 dishes of fruit, the Duke of PORTLAND was placed 1st, the Earl of HARRINGTON 2nd, and the Earl of WEMYSS, Gosford (gr. Mr. Wm. Galloway), 3rd. The 1st prize lot consisted of Grapes Muscat of Alexandria (three bunches) and Madresfield Court (three bunches), Peaches Princess of Wales and Barrington, Nectarines Pineapple and another, Melon Countess, Apples Peasgood's Nonesuch and Emperor Alexander, Fig Negro Largo, and Plum Kirke's.

For the collection of 12 dishes of fruit grown in an orchard house (Grapes excluded), the Duke of PORTLAND was again awarded the 1st prize, the Earl of HARRINGTON the 2nd, and WHITE-LAW REID, Esq., 3rd. The Duke of

PORTLAND's collection consisted of Nectarines Pineapple and Spencer, Peaches Royal George and Barrington, Apples Gascoigne's Seedling and Peasgood's Nonesuch, Pears Doyenné du Comice and Marguerite Marillat, Plums Kirke's and Jefferson, Figs Negro Largo and Brown Turkey.

On this occasion there were only three entries for the Scottish Challenge Trophy for eight bunches of Grapes, not more than two of any variety, and only one of the previous holders of the Cup exhibited. The Cup has to be won three times before it becomes the property of one of the competitors, and already it has been won twice by two of them. Fresh interest was lent to the competition this year by the appearance of a new competitor, who succeeded in carrying off the trophy with a magnificent exhibit. This was Mr. CAMERON CORBETT, M.P., Kilmaurs, Ayrshire (gr. Mr. J. Dixon). The trophy was presented by Mr. W. H. Massie, and, with the 1st prize of £6, the winner also secures a gold badge. The 1st prize exhibit was awarded 54½ points out of a possible 74. The 2nd prize was secured by the Earl of HARRINGTON, with 52 points out of 73, and the 3rd by Miss WELSH, Newstead Abbey, Notts. (gr. Mr. T. Ireland), with 44½ points out of 72. The varieties, with the points awarded to each bunch, shown by Mr. CORBETT were as follows:—

	Maximum Points.	Points Awarded.
Muscat of Alexandria (1) ...	10	8½
Muscat of Alexandria (2) ...	10	8½
Black Hamburg (1) ...	9	8
Black Hamburg (2) ...	9	7½
Madresfield Court (1) ...	9	8½
Madresfield Court (2) ...	9	8½
Muscat Hamburg (1) ...	9	7½
Muscat Hamburg (2) ...	9	7½
	74	64½

In the class for two bunches of Grapes, distinct varieties, there were two entries, and the 1st prize fell to Lord ELPHINSTONE, Carberry Tower, Musselburgh (gr. Mr. D. Kidd), while the 2nd was awarded to the Marquis of TWEEDALE, Yester, Haddington (gr. Mr. John Highgate). Lord ELPHINSTONE's bunches were Canon Hall Muscat, Alicante, Gros Maroc, and Muscat of Alexandria, and the Marquis of TWEEDALE's, Madresfield Court, Black Hamburg, Alicante, and Muscat of Alexandria. For 12 bunches of Muscat of Alexandria, for which there were six entries, the Earl of MAR & KELLIE, Alloa Park, Alloa (gr. Mr. W. J. Buchanan), won the 1st prize, Capt. A. STIRLING, of Keir, Dunblane (gr. Mr. T. Lunt), the 2nd, and Col. J. STEWART MACKENZIE, of Seaforth, Brahan Castle (gr. Mr. W. Campbell), the 3rd. There were eight entries for two bunches of Black Hamburg, and the 1st prize was awarded to the Earl of MAR & KELLIE, the 2nd to Mrs. MONTGOMERY, Kelvinside House, Glasgow (gr. Mr. D. G. McKerracher), and the 3rd to J. A. HARVIE-BROWN, Esq., of Dunipace, Stirling (gr. Mr. Jas. Menzies).

In the single-bunch classes, the best Muscat of Alexandria Grapes was shown by Capt. STIRLING, of Keir; the best Black Hamburg by Mr. CAMERON CORBETT; the best Black Alicante by N. E. D. MENZIES, Esq., Dumfries (gr. Mr. W. Smith); the best bunch of Lady Downe's by Mrs. HAMILTON OGILVIE, Archerfield, East Lothian (gr. Mr. Thos. MacPhail); the best Madresfield Court by Mr. CAMERON CORBETT; the best black variety, not included above (Cooper's Black), by Capt. STIRLING; and the best white not included above (Buckland Sweetwater), by the Duke of PORTLAND. For the black variety with finest bloom, Col. E. R. STEWART-RICHARDSON (gr. Mr. J. E. Davis) was placed 1st with Appley Towers.

The best green or white-fleshed Melon was shown by Mrs. KAY, Drumpark (gr. Mr. W. Scott), with Sutton's Best of All, and the best scarlet-fleshed by the Earl of HARRINGTON. The Earl of DEVON, Powderham Castle, Exeter (gr. Mr. T. H. Bolton), had the best 12 Figs; the Earl of STAIR (gr. Mr. B. Ness) had the best six Peaches (Barrington); Captain STIRLING the best six Nectarines (Pineapple); Sir GEO. BULLOUGH, Kinloch Castle, Rhum (gr. Mr. P. K. Hills), the best 12 Gage Plums (Reine Claude de Bavay); the Duke of PORTLAND the best 12 Yellow Plums (Jefferson); Col. GORDON, Threave House, Castle Douglas (gr. Mr. J. Duff), the best 12 Red Plums (Pond's Seedling); and WHITE-LAW

REID, Esq., the best 12 Purple Plums (Monarch). Sir GEO. BULLOUGH won the 1st prize for a collection of four varieties of dessert Plums, nine of each, and WHITE-LAW REID, Esq., was 1st for the collection of culinary Plums, four varieties, nine of each.

Sir GEO. BULLOUGH was the 1st for four dishes of Pears, five of each, grown in an orchard house.

HARDY FRUIT.

There were three entries in the class for 12 varieties of Apples, five of each sort; the 1st prize was won by Mr. E. F. CADDICK, Caradoc, Ross; while for a similar collection, grown in Scotland, for which there were four entries, Col. GORDON carried off 1st honours. Mr. J. LEE, Kingscroft, Chester, was placed 1st for a collection of six varieties, whilst for four dishes of pot grown or orchard-house Apples, Mr. D. NICOLL, Rossie, Forgandenny, won the 1st prize with superb fruit. The Duke of PORTLAND led for six dessert Apples, three of each, and in the single dish classes, six fruits of each. Mr. E. F. CADDICK had the best Charles Ross, Potts's Seedling, Stirling Castle, Warner's King, Gascoigne's Scarlet Seedling, Bismarck, Ecklinville Seedling, Emperor Alexander, Golden Spire, Lane's Prince Albert, Lord Derby, Lord Grosvenor, and Peasgood's Nonesuch. Mr. J. LEE had the best fruits of Wellington, Irish Peach, Lady Sudeley, Beauty of Kent, Cellini, and Grenadier. Col. GORDON had the best James Grieve, Worcester Pearmain, Duchess of Oldenburg, and Lord Suffield.

The Duke of PORTLAND excelled in the class for a collection of Pears, 12 varieties, 4 of each, and Sir GEO. BULLOUGH won the 1st prize for a collection of six varieties, four of each, grown in Scotland. The Earl of WEMYSS, Gosford (gr. Mr. Wm. Galloway), had the best examples of Beurré d'Amanlis, Doyenné du Comice, and Louise Bonne of Jersey; Sir GEO. BULLOUGH the best Conference; the Duke of PORTLAND the best Durondeau, and Souvenir du Congrès; WHITE-LAW REID, Esq., the best Jargonelle, H. J. YOUNGER, Esq., of Benmore (gr. Mr. R. Greenlaw), the best Pitmaston Duchess, and the Earl of DEVON the best Williams' Bon Chrétien.

PLANT CLASSES.

The best collection of four stove or greenhouse plants, distinct, in flower, was shown by C. DICKSON, Esq., Lasswade (gr. Mr. Duncan Mackay), the varieties being Acalypha hispida, Statice profusa, Oncidium incurvum, and Bougainvillea Sanderiana; 2nd, Sir R. USHER, Bart., Rotho (gr. Mr. Geo. McKinna).

For six foliage plants, distinct, exclusive of Palms, the 1st prize was secured by the Earl of HOME (gr. Mr. Alex. McMillan), with fine examples of Anthurium crystallinum, Alocasia metallica, and Dieffenbachia magnifica. There were only two exhibits, but the other, shown by Sir WILFRID LAWSON, Bart., was disqualified for non-compliance with regulation 10 of the show rules.

For six foliage plants, in pots, not to exceed 9 inches in diameter, the 1st prize was secured by Mrs. HUTCHISON, Carlwrie (gr. Mr. John Thom). This exhibitor staged splendid examples of Dracæna Van der Grooten and Dracæna Victoria. 2nd, the Earl of HOME.

For an exhibit of six table foliage plants, distinct, in pots not exceeding 6 inches in diameter, the plants to be not less than 15 inches above the pots, the Earl of HOME again led, showing good examples of Cocos Weddelliana, Pandanus Veitchii, Dracæna Princess May, and Codiaëums superba, interruptum, and Achievement; 2nd, Mrs. YOUNGER, Alloa (gr. Mr. Jas. Fairholm).

BEGONIAS.

Tuberous-rooted Begonias were a fine feature. The 1st prize for six varieties was secured by Mr. ROBERT BROWN, Dalkeith; 2nd, Mrs. DEWAR, Edinburgh (gr. Mr. W. F. Galloway), for three specimens, Mrs. BAILLIE HAMILTON, Duns, was placed 1st; and Mr. R. BROWN again led for three double varieties. Mr. BROWN also secured the 1st prize for one plant of a double Begonia, all his specimens being remarkably fine.

The Chrysanthemum classes were poorly filled. The 1st prize for six pots was won by Mrs. SIMSON, Colinton (gr. Mr. Fraser), for a very indifferent lot. Fuchsias were also poorly shown. For two plants, distinct, the 1st prize was awarded to C. DICKSON, Esq. In the Pelargonium classes, one collection was evidently not

considered; the judges must have overlooked them. For three plants, Sir R. USHER, Bart., was placed 1st, there being four exhibits.

CUT FLOWERS.

In the section for cut flowers, one of the most important classes was that in which a Silver Cup is offered for the best display of hardy perennials on a circular table, 5 feet in diameter. Mr. ADAM BRYDON, Innerleithen, gained the premier place. The exhibit was crowned with pretty spikes of *Lobelia cardinalis*, and flanked with such subjects as *Gladioli*, *Montbretias*, *Tritomas*, *Erigerons*, and *Lilium speciosum*. The display was easily worthy of the premier place. 2nd, M. G. THORBURN, Esq. (gr. Mr. A. Dickson); 3rd, Mrs. FLEMING HAMILTON (gr. Mr. Wm. Young). More of these groups are desirable at this Edinburgh show: only three exhibits were seen on this occasion. In the class for 24 spikes of *Gladioli*, Messrs. GEORGE MAIR & SONS, Prestwick, easily secured the 1st prize, putting up some magnificent spikes, *Mars*, *Turenne*, *Triomphe de Caen*, and *Bouquet de Feu* being exceptionally good. The 2nd prize was won by Mr. JOSEPH C. FORDY, Warkworth, Northumberland, for a very even lot, but the blooms lacked the freshness and brilliance of those in the 1st prize group. Only two exhibits were staged but there were also classes for six and three spikes, in which competition was good. Mention must be made of the exhibit which gained the 1st prize in the class for 12 spikes. The exhibitor was Mr. A. BRYDON, Innerleithen, and he had a keen competition.

SWEET PEAS AND ROSES.

In the Sweet Pea classes the flowers were somewhat small, but the brilliance of the colours at this season was very noticeable. For 12 bunches, 1st place was secured by the Hon. Mrs. BAILLIE HAMILTON: the variety *Earl Spencer* was noticeable. 2nd, Mr. JOHN FLETCHER, Lanark; this exhibitor showed the variety *Mrs. Hugh Dickson* in capital condition. Mrs. BAILLIE HAMILTON again led in the class for six bunches, Mr. FLETCHER being 2nd. There was a class for a vase to contain not fewer than 18 spikes of any new variety of Sweet Pea not yet in commerce; three exhibitors staged. The 1st prize was given to an intense-coloured seedling somewhat resembling *George Stark*, but much deeper in colour. It was shown by Mrs. DUNBAR-DUNBAR, Forres (gr. Mr. John Grigor).

In the classes for Roses, the premier prize was a silver challenge cup presented by Messrs. Alexander & Hugh Dickson, Belfast, for a collection of 24 Roses in not fewer than 12 varieties. Six exhibits were staged, the finest by Mrs. DENNIS-ROUN, Row (gr. Mr. Wm. Parlange); 2nd, Mr. J. RUSSELL, Newton Mearns; 3rd, Earl of DALHOUSIE, Carnoustie (gr. Mr. John Simpson).

For 36 Roses, distinct varieties, Messrs. JAMES COCKER & SONS, Aberdeen, easily led, with a brilliant lot of blooms, their rich colour being remarkable. 2nd, Mr. HUGH DICKSON, Belfast; 3rd, Messrs. D. & W. CROALL, Dundee.

In the class for a collection of Roses, arranged in a space 15 feet by 5 feet, and shown with Rose buds and foliage, Messrs. COCKER, Aberdeen, were awarded the 1st prize for a superb collection; 2nd, Mr. Wm. FERGUSON, Dunfermline. Both exhibits were conspicuous for the fine quality of the flowers. There were numerous classes of Dahlias, Roses, Carnations, Pansies, Violas, &c., and good examples were staged in nearly every section. Mention must be made of the splendid exhibit of early-flowering Chrysanthemums, shown by Mr. JOHN SMELLIE, which secured the 1st prize in the class for 18 bunches.

VEGETABLE CLASSES.

(Open to All.)

For a display of vegetables, 18 dishes, not fewer than 12 kinds, and not more than two dishes of any kind, the 1st prize was awarded to the Duke of PORTLAND, Welbeck Abbey (gr. Mr. Gibson), for a superbly-finished collection, which comprised Sutton's White Celery, Pizetaker Leeks, Superb Pink Celery, Early Giant and Autumn Mammoth Cauliflowers, Epicure Cucumber, Gladstone and Centenary Peas, extra fine Eclipse and White City Potatoes, Ailsa Craig Onions, Parsnips and Carrots. 2nd, Col. E. STUART RICHARDSON (gr. Mr. J. E. Davis).

For a display of vegetables grown in Scotland, 12 dishes in 12 kinds, Mr. GALLOWAY, Gosford,

secured the 1st prize with meritorious dishes, including Favourite Pink Celery, Duke of York Tomato, Ailsa Craig Onion, and Alderman Pea; 2nd, Mr. URQUHART, Melrose.

The FLORAL COMMITTEE awarded First-class Certificates to the following plants:—*Montbretia Comet*, a seedling from and darker than *Prometheus*, and *Lathyrus latifolius magnifica*, both from Mr. G. DAVIDSON, Westwick. Also to Hybrid Tea Roses Mrs. Charles E. Allen and Mrs. Frank Watman, from Mr. HUGH DICKSON, Belfast; and to James Ferguson, a sport from *Caroline Testout*, from Mr. W. FERGUSON, Dunfermline.

NON-COMPETITIVE EXHIBITS.

Mr. J. PROCTOR, Portobello, staged a large collection of early Chrysanthemums in small pots, also a variety of Ferns. (Bronze Medal.)

Mr. L. R. RUSSELL, Richmond, had a large group of Ivies arranged on the floor. Interspersed among these were Clematis in small pots. He had also specimens of a good strain of *Celosias*. (Gold Medal.)

Messrs. GEO. FAIRBURN & SONS, Carlisle, set up a large table of Cactus and Pompon Dahlias. (Silver-gilt Medal.)

Messrs. STORRIE & STORRIE, Glencarse, near Perth, staged fruit in pots, Gooseberries, Apples, Currants, &c., and examples of their strains of *Celosia*, *Streptocarpus* and *Gloxinia*. (Silver-gilt Medal.)

Messrs. W. THOMSON & SONS, Clovenfords, showed baskets of Duke of Buccleuch and Gros Colman Grapes in fine condition.

Messrs. TILLIE, WHITE & Co., Edinburgh, contributed a splendid display of vegetables, Tomatoes, Celery and Leeks being very fine. (Silver Medal.)

Mr. A. THOMSON, Dean, Edinburgh, showed early Chrysanthemums. (Bronze Medal.)

Messrs. R. B. LAIRD & SONS, LTD., Pinkhill, Edinburgh, arranged on the floor of the Market a large and artistic group of decorative plants, including *Hydrangeas* and *Liliums*.

Mr. D. MCNISH, Crieff, staged Pentstemons, Phloxes, and herbaceous flowers. (Silver-gilt Medal.)

Mr. A. L. GWILLIM, New Eltham, Kent, provided a large display of Begonia blooms. (Silver Medal.)

Messrs. GUNN & SONS, Olton, Birmingham, staged bunches of Phloxes in great variety. (Silver Medal.)

THE KING'S ACRE NURSERY Co., Hereford, staged a large collection of hardy fruit, comprising Apples, Plums, Peaches, &c., in pots, and dishes of Pears and Apples. (Gold Medal.)

Mr. R. BOLTON, Warton, Carnforth, staged Sweet Peas in splendid condition, and in the more popular varieties, *Mrs. Townsend*, *Clara Curtis*, and *Earl Spencer* being extra fine. (Gold Medal.)

Messrs. DOBBIE & Co., Edinburgh, had a brilliant display of cut flowers, artistically arranged in large masses of one kind. Specially fine were the Sweet Peas *Earl Spencer*, *Masterpiece*, *Edrom Beauty*, and *Mrs. Townsend*. Some choice African Marigolds were noticed. There were also enormous quantities of cut Dahlias in all the sections, and a variety of other flowers in season, besides a charming display of cut Roses on another table. Messrs. DOBBIE also staged early Chrysanthemums and Dahlias in pots. (Gold Medal.)

Dr. MCWATT, Duns, furnished a table with hardy plants such as Violas, Primulas, *Gladioli*, and *Delphiniums*. (Bronze Medal.)

Messrs. J. METHVEN & SONS had groups of plants freely arranged on the floor of the Market. (Silver Medal.)

Messrs. MASON & Co., Jameston, Dumbarton, set up a small collection of cut flowers. (Bronze Medal.)

Messrs. SUTTON & SONS, Reading, showed a circular arrangement, which was marked by a series of pillars worked out in Asters and joined together with arches of the same flowers, many of their specialities, particularly Melons, Tomatoes, Potatoes, Asters, Beets, Carrots, and Marrows. (Silver-gilt Medal.)

Messrs. STUART LOW & Co., Bush Hill Park, provided some charming Orchids, both hybrid and species; also cut Carnations. (Silver-gilt Medal.)

Mr. JOHN DOWNIE, Murrayfield, Edinburgh, had a group of stove and greenhouse plants tastefully grouped on the floor. (Silver Medal.)

Messrs. M. CAMPBELL & SONS, High Blantyre,

had Carnations in variety, also very fine Cactus and Show Dahlias. (Bronze Medal.)

Messrs. R. WALLACE & Co., Colchester, staged an extensive collection of *Montbretias*, arranged in groups of one variety; also blue *Gladioli*, *G. primulinus* hybrids and others, as well as a few hardy flowers. (Silver-gilt Medal.)

Messrs. THOS. S. WARE, LTD., Feltham, had a boldly-arranged bank of Double Begonias, the finest they have ever brought North; the lovely pink *Lady Cromer*, the frilled *Mrs. J. Brinsmead*, and *Lady Clifford* being among the more prominent. (Gold Medal.)

Messrs. W. CUTBUSH & SON, Highgate, had a group of various flowers on the floor which was one of the most attractive features of the show. A Lily pond with a vast array of hardy flowers grouped around and broken up with tall vases of *Gladioli*, *Tritomas*, *Pentstemons*, and a collection of Perpetual Carnations. (Gold Medal.)

Mr. MATTHEW CUTHBERTSON, Rothesay, exhibited a large collection of *Montbretias*, for which he was awarded a Bronze Medal.

The ROYAL HORTICULTURAL SOCIETY sent a collection of Grapes from Wisley which were the cause of much discussion among growers, some of the varieties being not very well known. They were well cultivated, *Alnwick Seedling*, *Diamond Jubilee*, *Mrs. Pearson*, *Appley Towers*, *Muscat Hamburg*, *Madresfield Court*, *Black Hamburg*, *Duke of Buccleuch* and *Canon Hall Muscat* were represented by excellent clusters. To this a special award was made.

Messrs. J. FAIRLEY & Co., Cairney Hill, Fife, staged a nice collection of Roses and Carnations, which was prettily arranged. (Silver Medal.)

Mr. R. FERGUSON, Dunfermline, exhibited Roses in large masses. (Bronze Medal.)

Messrs. JOHN FORBES, LTD., Hawick, arranged a large collection of cut flowers in their usual tasteful manner; Phloxes, Pentstemons, Carnations, and Violas being perhaps the most noticeable. (Silver-gilt Medal.)

Messrs. J. COCKER & SONS, Aberdeen, staged a selection of hardy flowers. (Silver Medal.)

Messrs. CUNNINGHAM, FRASER & Co., Comely Bank, Edinburgh, had a large bank of hardy flowers intermixed with Phloxes and Pentstemons, with excellent Roses. (Silver-gilt Medal.)

Messrs. BUNYARD & Co., Maidstone, provided a collection of hardy fruits, including a few trees in pots. (Silver-gilt Medal.)

Mr. H. N. ELLISON, West Bromwich, had Ferns in favourite sorts. (Silver Medal.)

Mr. C. ENGELMANN, Saffron Walden, contributed Perpetual Carnations in fine varieties, showing high cultivation. (Silver Medal.)

Messrs. ED. WEBB & SONS, Wordsley, Stourbridge, exhibited a mixed collection of flowers, fruits and vegetables; Sweet Peas, *Liliums* and Carnations were choice. (Gold Medal.)

Messrs. WEBB & BRAND, Saffron Walden, had a very attractive exhibit of Hollyhocks in a great variety of colours. (Silver Medal.)

Messrs. WELLS & Co., Merstham, exhibited a large collection of cut flowers, which included fine Pentstemons, Phloxes, and a great variety of Chrysanthemums, the singles of these being very pretty.

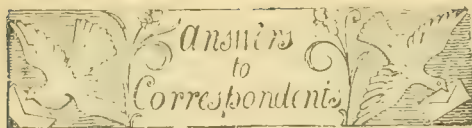
Messrs. YOUNG & Co., Cheltenham, staged a nice lot of Perpetual Carnations. (Silver Medal.)

Messrs. A. YOUNG & Co., Elgin, showed Sweet Peas. (Silver Medal.)

Obituary.

WILLIAM LEIGHTON.—The death of this well-known Glasgow seedsman, of 36, Renfield Street, and Ardlui, Maxwell Drive, Glasgow, occurred on August 27. The deceased gentleman was on his way to Switzerland, but, on being seized with illness in Paris, returned to this country and went to Eastbourne, where he died. The funeral took place in Edinburgh, of which city he was a native, in the Grange Cemetery, on September 1, and was largely attended. Mr. Leighton entered the seed trade as an apprentice with the then well-known firm of Messrs. Peter Lawson & Sons, Edinburgh, and, being a hard worker and a man of ability, he soon reached a foremost position in the seed trade.

MAX LEICHTLIN.—The well-known German Botanist, Herr Max Leichtlin, died on September 3, in the 79th year of his age. The funeral took place at Baden-Baden on the 5th inst.



APPLE LEAVES: *Tal. 1907.* The "greenish mould" on the Apple leaves is a fungus, *Cladosporium*. The fungus is not the cause of the death of the leaf, and is probably only saprophytic. This dying or "scorching" of Apple leaves takes place, in the case of certain varieties, in years like the present and last, when cold, wet nights and generally unfavourable weather conditions prevail. It is often most pronounced in cases where the trees lack potash. In some cases it is considered that *Cladosporium* develops a parasitic habit, and causes a "leaf-spot" disease (See *Journal*, Royal Horticultural Society, vol. xxxiii., p. 507.)

APPLE SHOOTS: *H. G. C.* The white, flocculent substances on the branches of your Apple trees are colonies of woolly aphis, or American blight. This pest may be eradicated by scrubbing the affected parts with some insecticide, such as caustic soda or Calvert's carbolic soap. In the winter the trees should be well sprayed with the following specific: 1 lb. caustic soda, 3 lb. carbonate of potash, 10 ounces of soft soap, and 10 gallons of water, adding the soft soap last. The nursery firm from whom you obtained the trees may not be responsible, as the pest is common in neglected gardens, and may have spread from a neighbour's trees.

APPLE SOPS IN WINE: *J. Coombes.* One fruit was wine colour right through to the core, the other quite white with no trace of red.

BEGONIA LEAVES: *Wm. Yandell.* Microscopic examination showed no trace of any fungus disease in the Begonia leaves. The trouble may be due to mites; dip the plants in Tobacco water.

CATERPILLARS ATTACKING BEECH TREES: *A. F. C.* The caterpillars are those of the Buff-tip moth (*Pygaera bucephala*). It is not uncommon for them to attack Copper Beeches.

CELERY DISEASE: *E. O. J.* The plants are affected with Septoria petroselinii var. *Apii*. See reply to *J. S.*, p. 152, August 20. Do not plant Celery on the same land next year.

COLOUR VARIATION IN ROSE SOUVENIR D'UN AMI: *C. P., Nagpur.* Almost all Rose sports have a tendency to revert. *Souvenir de S. A. Prince* sported from *Souvenir d'un Ami* simultaneously in more than one place, and it is not infrequent to find various shades of pink upon this sport. Countess of Oxford and Heinrich Schultheis both produced two distinct sports, and these have reverted upon more than one occasion. Sometimes these are striped similar to *Pride of Reigate* and *Merrie England*, and occasionally one portion of the flower is quite distinct from the others, and not even striped or splashed.

FIG LEAVES UNSATISFACTORY: *E. M. M.* The Fig leaves sent are quite free from disease.

FRUITS CRACKING: *R. T. Gallaher.* The fruit sent was, on its arrival, covered with several kinds of fungi, some of which were converting the flesh into pulp. It is impossible to say what was the original cause of the trouble without seeing a fruit in the first stages of disease.

GRAPES: *J. G. Walker.* There is no fungus disease attacking the Grapes sent. The cracking, &c., must be due to some error of cultivation.

GRAPES DISFIGURED: *J. G. W. and Muscat.* There is no trace of disease on the Grapes. Their disfigurement has been caused by rubbing, probably during the process of thinning.

GRAPES FAILING TO COLOUR: *S. G. Rogers.* The cause is due to some cultural defect; there is no fungus in the tissue at the hard places; the blue-green "mould" is a fungus that comes afterwards, when the skin cracks.

GRAPES MUSCAT OF ALEXANDRIA AND BLACK HAMBURG: *Muscat.* These two varieties cannot be grown satisfactorily in the same house as they require different treatment. Muscat Grapes require considerably more heat than Black Hamburgs; the varieties also flower at different times. An abundance of light and sun is necessary to "finish" the berries of

Muscat varieties, whereas Black Hamburgs prefer shade, and although a very fair crop of both varieties may be ripened in the same house, really good results can never be attained. Should it be decided to devote the house to Muscats, time may be saved by inarching Muscat of Alexandria on to the Black Hamburg, the latter making an excellent stock. This would prevent any disturbance of the border. To prevent the roots getting through the wall, take out a narrow trench and concrete the face of the wall on the inside.

GLOXINIAS AND BROCCOLI: *J. T., Latchmere.* The Broccoli plants are badly affected with "Club-root" (*Plasmiodiophora Brassicae*). (See *Gardeners' Chronicle*, August 27, p. 171.) With the aid of a microscope, you could see the cells of the roots filled with the plasmodium and spores of this destructive parasite. Vaporite is not of the slightest use to check the disease; you must use lime. If you will forward specimens of the Gloxinias, we will submit them to an examination, in order to determine the nature of the "rust."

GOOSEBERRY DISEASE: *J. G. P. Cocks.* The plants are affected with the American Gooseberry-mildew. This disease is now notifiable, and you should at once report this outbreak to the Secretary, Board of Agriculture, 4, Whitehall Place, London, at the same time asking for the Board's illustrated leaflet on the disease. Spraying against this disease is quite useless at this time of year; the tip of every shoot on every bush should be removed for 6 inches and burnt, and all the suckers removed. The brown scurfy "spawn" present on the surface of the shoots sent contains the winter spores, and these will drop out and infect the soil unless the affected parts are removed.

HORTICULTURAL INSTRUCTOR: *Instructor.* Your first qualification should be a sound, practical knowledge of all the branches connected with horticulture; if, in addition to this, you can express yourself clearly before an audience, little further is needed. A knowledge of the sciences connected with gardening, such as botany, chemistry, physics, and economic entomology, will prove useful. The possession of the first class certificate in the examination held by the Royal Horticultural Society, or the advanced course of the Science and Art examination in domestic economy and rural hygiene, would be of value.

INSECT EATING ELM LEAVES: *J. C.* Unless you send us specimens of the insects, we cannot advise you in the matter. Spraying with some arsenical or other strong poisonous insecticide, if practicable, is to be recommended.

MAGNOLIA LEAVES: *T. A. Hyde.* There is no disease present on the Magnolia leaf sent; the trouble must be looked for in some other direction. Probably the adverse weather conditions or some cultural defect is responsible.

MONTBRETIA FOLIAGE TURNING BROWN: *W. H. C.* There appears to be no trace of any fungus or insect disease in the Montbretias sent, and we can offer no explanation of the leaves going brown as they have done.

NAMES OF FRUITS: *Hallow.* Thanks for sending such excellent specimens. We consider it is Kirke's.—*B. H., Cork.* The history of the seedling Apple you send is very interesting. The variety has several merits, the flesh being firm and of agreeable flavour, but the fruit lacks size and colour, and we are afraid that because of these defects it will never become a popular sort. It might prove a useful variety in some localities.—*Rides.* Apple Scarlet Pearmain.

NAMES OF PLANTS: *G. W.* 1, *Helianthus multiflorus maximus*; 2, *Achillea*, *Parmica*, the Pearl; 3, *Helianthus rigidus*; 4, *Fuchsia Arabella*; 5, *F. Scarcity*; 6, *F. Sir Colin Campbell*; 7, *F. Aurora superba*; 8, *F. Charming*; 9, *F. Mrs. C. Turner*; 10, Not recognised.—*H. S.* 1, *Fuchsia gracilis*; 2, *F. Riccartonii*; 3, *Pelargonium ardens*; 4, *P. quercifolium* var. *Douglas*; 5, *P. fragrans*; 6, *P. capitatum*.—*D. Barr.* *Pseudotsuga* (*Abies*) *Douglasii*.—*J. D. H.* 1, probably *Cistus crispus*, the flowers were decayed; 2, *Cistus villosus*; 3, a form of *Potentilla fruticosa*; 4, *Rosa virginiana*; 5, probably a species of *Bigelovia*; 6, *Hypericum elatum*.—*Kesteven.* Apparently *Daphne Laureola*, but the leaves are not of

normal size; please send again when in flower.—*J. J. L., Amer.* *Arbutus Andrachne*.—*T. C.* *Echium vulgare*.—*P. H.* 1, *Monarda didyma*; 2, *Pisum elatius* var. *umbellatum*; 3, *Eupatorium ageratoides*; 4, *Echinops Ritro*; 5, *Anthemis tinctoria* var.; 6, probably *Helenium autumnale*, but the specimen was too scrappy for proper identification.—*F. R. F.* *Stenanthium angustifolium*.—*G. H.* *J. Clarkia elegans* var. *flore pleno*.—*S. G. R.* *Clitoria Ternatea*.—*S. & S.* *Senecio Cineraria*.—*C. Prentis.* The Sedum was incorrectly named *S. rhodanthum*; it is *S. Middendorffianum*.—*E. Semper.* *Solidago lanceolata*.—*J. G. & G.* 1, *Nephrodium effusum*; 2, *Blechnum occidentale*.—*Anxious.* 1, *Clethra arborea*; 2, *Lonicera involucrata*; 3, *Veronica salicifolia*; 4, *Polygonum cuspidatum*; 5, *Spiraea discolor*; 6, *Leycesteria formosa*; 7, *Symphoricarpos orbiculatus* var. *variegatus*; 8, *Erica stricta*; 9, *Erica vagans alba*; 10, *Spiraea japonica*.—*P. E. N.* *Cypripedium barbatum*. Carnation next week.—*R. P.* 1, *Cypripedium Muriello* (*Boxallii* × *Argus*); 2, *Cypripedium conspicuum* (*Harrisonii* × *villosum*); 3, *Cypripedium Ashburntoniae* (*insigne* × *barbatum*); 4, *Cattleya Patrocinii* (*Leopoldii* × *Loddigesii*); 5, *Oncidium incurvum*; 6, *Dendrobium Pierardii*.—*C. H.* One of the garden forms of *Adiantum cuneatum*.—*E. M.* A good form of *Cattleya Iris*. We return the small flower; will you furnish us with a description of the plant's habit of growth and name the country it came from?—*N. B.* 1, *Acampe papillosa*; 2, *Pleurothallis conanthera*; 3, *Epidendrum selligerum*; 4, *Maxillaria meleagris*; 5, *Dendrobium Johannis*.—*J. P.* *Bulbophyllum inflatum*.—*A. T.* 1, *Potentilla fruticosa*; 2, next week; 3, *Spiraea Bumalda* "Anthony Waterer"; 4, *Cassine chrysophylla*; 5, *Polygonum sachalinense*; 6, *Lythrum salicaria*; 7, *Chrysocoma comauera*; 8, *Clematis tubulosa*; 9, *Eriobotrya japonica*; 10, *Libonia penrhosiensis*.

PEACH FOR EXAMINATION: *W. L.* The Peach arrived a mass of pulp; send examples of the disease in its early stage.

PEAR CRACKING AND LEAVES DISEASED: *T. G. G., York.* The fruits and leaves are affected with "scab," caused by *Fusicladium pirinum*. At this stage you can do nothing beyond burning the affected fruits and leaves, being careful to gather and burn all the latter when they fall. Next spring spray the trees with dilute Bordeaux mixture (not more than half strength). The first application should be made when the buds are opening, repeating the operation at the time of blooming and again when the fruits have formed.

PEAR LEAVES DISEASED: *G. S. R.* The disease of the Pear leaves has been caused by the caterpillars of the Pear-leaf blister-moth (*Cenotoma scitella*). The best remedy is to give one or two early sprayings with arsenate of lead, when the leaves are appearing, and before the caterpillars have burrowed into them.

PELARGONIUM SEEDLING: *G. T.* The flowers are pleasing, but the variety shows no advance on others already in cultivation.

ROYAL ARBORICULTURAL SOCIETY. *A. T.* The Secretary is Mr. John Davidson, Estate Office, Haydon Bridge, Northumberland.

STOCKS FOR FRUIT TREES: *Fruit Trees.* Scan our advertising columns, or insert a small advertisement in some gardening paper.

TAR ON FRUIT TREES: *F. J. K.* We are afraid you can do little now, as the damage is already done, and the use of paraffin oil, as you propose, would only accentuate the trouble. Try the effect of hart grease, rubbed on with a piece of coarse sacking.

VINE ROOTS: *A. Morton.* There is no fungus present on the roots and leaves of the vine sent. The "spotting" of the leaves must be due to some wrong cultural treatment.

Communications Received.—*J. P. B.*—Foreman—Richmond.—*H. B. J.*—Foreman, Salep Shrubbery.—*F. J. R.*—C. G. D., Sweden.—*P. E. N.*—Old Subscriber.—*B. R. L.*, Southampton.—*W. C.*—H. R.—J. H. C.—*A. W. P.*—*A. E. H.*—*N. M.*—*F. J. C.*—*A. R.*—*F. K.*—*A. D.*—*J. D.*—*B. G. S.*—*L. T.*—*S. A. D.*—*F. J. K.* & Sons.—*J. G.*—*F. M.*—*W. N. & Co.*—*A. & M.*—*W. J. W.* & Co.—*R. L. B.*—*W. A. D.*—*J. W.* & Sons.—*A. G.*—*E. C.*—*Somerset*—*C. T. D.*—*T. A. H.*—*W. E.*—*A. H. P.*—*E. G. P.*—*W. F.* & Co.—*J. E.*—*Sussex*—*W. E.*—*H.*—*Selwood*—*Henri*—*W. S. B.*—*J. H. E.*—*A. G.*—*A. & B.*—*M. & Co.*—*V. W.*—*J. S.*—*G. M. T.*—*A. N.*—*A. H.*—*F. J. R.*—*W. B. L.*—*J. W.*



Photograph by H. N. King

ROSE LEUCHTSTERN FLOWERING ON A RUSTIC ARCH.

FLOWERS, BRIGHT ROSE-COLOURED WITH A WHITE CENTRE.



THE Gardeners' Chronicle

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THE PROFFITABLE ARTE OF GARDENING.

THE above is the title of what is probably the earliest book on horticulture published in England. It seems to be an enlarged edition of "A most briefe and pleasant Treatise teaching how to dress sowe and set a garden" (1563). Other editions exist dated 1568, 1574, 1579, 1586, 1593, 1594, and 1608. My copy is the 1574 edition, and as an enlargement to the title it reads: "To which is added much Necessarie Matter and a Number of Secretes, with the Physicke Helpes belonging to each Herbe, and that easily prepared; gathered by Thomas Hill, Citizen of London, now for the third time set forth." The publisher was H. Bynnmann. Little is known of the author except that he translated and compiled books on other subjects as well as gardening. He was born in or about the year 1543, and died in or about the year 1594.

Were we to depend upon the text of the volume we could not but conclude that Hill was learned and well read in Latin and Greek, while some parts of it are derived from French authors of the period. He himself declined to be placed among the learned of his day, for, in an address "To the Reader," which is composed of apt and musical English, he remarks: "What fault is there so small, which *Momus* will not finde. If the learned sort, brought up alwayes under *Minerva* are sometime touched of him; much more I who never tasted of the learned laike, but rather alwayes rudely taught among the *Smythes* of

Vulcanus Forge, but needes he stung of him."

The volume is divided into two books, the first of which contains 14 chapters and the second 64. The former gives general details; the latter treats of the various vegetables and flowers, with their "physical helpes." The first part contains, one would have believed, everything that the superstitious and credulous ever thought of in connection with the workings of vegetable Nature. It lessens our anxiety regarding what we might suppose to be the training necessary to an ordinary gardener in these times, to be informed that everybody was not expected to be thoroughly grounded in these subtle distinctions, but the author's "conscience bound (him) somewhat to put such matter into their heads (the common sort of people's), occasioning them thereby to use the counsaile." The plants described and treated in the second book are Lettuce, Endive, Succorie, Blete—two kinds, Spinage, Orache, Beetes, Coleworts, Land Cresses, Parcelly, Sperage, Sauerie, running Time, Louage, Garden Mallows, Fennel, Annis, Cummine, Coliander, Mustard, Cheruill, Capers, Dill, Rue, Isope, Mintes, Garden Time, Organie, Violettes, Roses, Basill, Maiorame, Marigolde, Lavender, Spicknarde, White Lillie, Wood Lillie, Floure Deluce, Pionie, White Poppie, Floure Petilius, Velvet Floure, Giliflowre and Carnation, Strawberries, Borage, Buglos, Rosemarie, Germander, Blessed Thistell, Wormwood, Sothernwood, Sauge, Purslane, Penderoyall, Artichocke, Leekes, Onion, Garlike, Radishe, Navew, Parsnep, Yealow Carot, Melons, Pompons, Gourds, Beane of Egypt. This is a by no means exhaustive list if it is compared with that of Lusses, of which it falls very far short alike in Vegetables and Flowers. The latter include garden Mallows (Hollyhocks), which it is remarked "the women in our time use to decke their houses and windowes with"; Violets and Roses, which are given a lengthy chapter, in which methods of "forcing," retarding, and preserving blooms for winter are discussed. In this chapter he mentions another of his books, "intituled *Naturall and Artificial Conclusions*, where I write largely of these and many other right pleasant conclusions, to be read and understood of the common sort." Of the Marigold we are informed it was named "the husbandman's Dyall, for the same so aptly declareth the houres of the morning and evening." Here is a "secret" which holds good to the present: "To have them grow bigge, and to beare thicke and brode floures, you ought then to remove and set the young plantes often." The White Lily was preserved in the bud like Roses for winter, and the credulous were assured that Lilies of red, green or blue could be had by following the directions he gave. Lily of the Valley "growing properly in Woods and Chieflie in Valleys" had been "of late yeres brought and planted in the gardens." The Floure Deluce was *Iris florentina*, and like most of the flowers already mentioned, it was cultivated for its "Physicke Helpes," as was also the *Pæony*. A concoction of the root of *Pæony* "received unto the nose doth put away the King's evill—and the roote hanged about the necke dothe put away the falling sicknesse, as by a late practise was tried,

that whyles a child had this roote hanging about the necke, the chyld so long was not greued with the disease, but when the same was taken from his necke, then was he vexed in lyke sorte as before." Floure Petilius is the French Marigold, which the author remarks was like the "Sweet Bryertree." But he has got confused with some remarks of Pliny's. The last flower is the Carnation.

Of the vegetables the greatest space is given to Leeks, Artichokes, Lettuces, Rue, Onions, Garlick, Radishes, and a very lengthy chapter on Gourds. Rue in those days possessed quite wonderful properties. Beds edged with it were for ever free from vermin of all kinds, and a green shoot hung in a room dispersed flies. It was one of the greatest specifics against the Plague, and for the eyesight it was very beneficial, as Milton afterwards declared it to be, for "both curious painters and fine gravers doe often eate of this herbe, with their meate, for the clearing and amending of their sight." And these are only a few of its marvellous properties. The tangled roots of "Sperage," or Asparagus, were called "a sponge," a term which Milton uses several times, and he makes it clear that Sperage was the name given to the shoots, and sponge to the roots from which the shoots sprang. Some years ago I made a glossary of the quaint words to be found in the pages of this volume, a few of which are:—Backes for bat; blades, lanceolate leaves; cod, a pod; forked dibble, a garden fork; Mulse, honey and water; sneze, snuff; Rosen, resin; battle, ground well-cultivated; batten, to feed, e.g., "batten them with dung"; clag, sticky, applied to clay soil; ouerthicke, clayey; shift, a layer; timely, early; trimmed, cultivated; lapping, covering; and Nosewort, *Veratrum album*. Raisins are spelled "reasins," which recalls Shakespear's "reasons as plenty as blackberries," just as "battle" reminds one of Douglas' "In battle gers burgeons." The volume is illustrated with "A Proper Knot for a Garden," Two Mazes, and a bird's-eye view of a Flower garden, the central portion of which is enclosed by an ornamental paling with many crowned pillars. The beds are oblong and oval, and surround a knot laid out in the middle of the space. Between this and the outer fence of the pales are more oblong beds or borders, and there is also an ornamental gateway; a draw-well on one side, and the termination of a covered walk on the other. The later editions include a treatise on Bees, and another on Grafting, or, let us say, on fruit culture. R. P. Brotherton.

NOTES ON IRISES.

CERTAIN WHITE FLOWERED SPECIES.

OF the various white flowered species of bearded Irises in cultivation, the two most common are *I. florentina* and *I. albicans*, but considerable confusion appears to exist both in gardens and in herbaria as to the identity of the two. This confusion dates back to the time of Linnaeus, who defines *florentina* as a bearded Iris and then bewilders the reader by referring him for illustration to plate 154 in Miller's *Icones*, which clearly represents some member of the *spuria* group. Thunberg's description in his *Dissertation* (1782), "*scapus simplex, subtriflorus, pedalis et ultra*," is too vague to allow of identification, and it is not until the plate appeared in the *Botanical Magazine*, tab. 671,

that a plant is figured under the name of *I. florentina* that is identical either with *florentina* or *albicans* as they are generally known. The two names should, however, be attached to two quite distinct plants. The former, as represented in the *Botanical Magazine*, flowers early with the common form of *I. germanica*, has a distinctly blue-grey tinge in the falls, scarious spathes, and a certain number of straggling, whitish hairs on the inner side of the haft of the standards. The foliage is relatively narrow for the size of the plants, and the pedicel or branch that supports the lowest of the four flowers, that the inflorescence contains, is at least 3 inches or 4 inches in length. Attempts have been made to show that this *Iris* is a seedling form of *I. pallida*, and the scarious spathes, together with the presence of hairs at the base of the standards, lend support to this view, but with me, at any rate, all attempts to self-fertilise the plant have been fruitless, and the only way to settle the question would be to raise and flower plants from self-fertilised seed. The origin of the plant is shrouded in mystery, and, after searching through many herbaria, I have never yet succeeded in finding any authentic wild specimen of

hairs at the base of the standards. For some reason or other it is a difficult plant to manage here. Rhizomes sent direct to me from Kashmir flowered well in their first season, but since then they have dwindled and disappeared, although a purple-flowered form of *I. germanica*, which was sent with them, flowers well and increases rapidly. Fortunately, there is now obtainable a hybrid of this species, raised by Sir Michael Foster, and lately distributed under the name of the Shelford variety of *I. kashmiriana*. Its flowers are of great substance, slightly tinged with blue, and it would scarcely be surprising to find that it is a cross with *I. pallida dalmatica*, for the shape of the flowers and the inflorescence are very similar. So far, however, the hybrid has proved infertile, and the problem of its parentage remains unsolved.

Another plant—from Beluchistan—which flowered with me for the first time this year, proved to have beautiful, large, white flowers, delicately tinged with blue. The long, pointed, green spathes separate it at once from the above-mentioned species, and it is possible that it is only a form of *Iris Bartonii*, which came from Kandahar. The fact that white *Iris*es are very



[Photograph by W. Irving.]

FIG. 82.—*ERODIUM CORSICUM*: FLOWERS ROSE-PINK WITH DEEPER-COLOURED VEINING.

this plant. Another error connected with this *Iris* is that it is exclusively the plant whose dried rhizomes form Orris root, but among several importations of rhizomes from the neighbourhood of Florence, cultivated by the late Sir Michael Foster, Messrs. Barr & Sons, and here in my garden, not *I. florentina* but *I. pallida* in various forms has invariably made its appearance.

From this *Iris florentina* another species, which is found in Spain, in the neighbourhood of Cadiz and Almeria, was first separated by Lange in 1860, under the name of *I. albicans*. It is clearly distinguished by the fact that the flowers are nearly sessile on the stem, by the snow-white colour of the flowers, by the entire absence of hairs at the base of the standards, and by its spathes, which are more or less scarious only in their upper halves, when the flowers open. It flowers, too, considerably later than *I. florentina*, and the broader leaves, with their curious tendency to twist, give the plant quite a different appearance. This *Iris albicans* is doubtless the plant illustrated in Redouté's *Liliacæ*, t. 23, under the name of *I. florentina*.

A third white-flowered *Iris*, which, unfortunately, is not common in cultivation, is *I. kashmiriana*, a species with milk-white flowers and

commonly used in the East as decoration in graveyards makes it difficult to obtain really wild specimens, and increases the difficulty of determining their original habitat and distribution.

Besides these plants, there is another that it would be extremely interesting to obtain, and which may very likely exist in Egyptian gardens, namely, the white form of *Iris Madonna*, specimens of which, together with others of the blue form, which has been in cultivation for some years, were obtained on Mount Saber in the Yemen district of Arabia by Botta in 1837. A few white-flowered plants were, I believe, obtained by Messrs. Dammann, who introduced *Iris madonna* to cultivation, but I have been unable to obtain specimens or to trace them. I should be grateful if any one possessing such an *Iris* would communicate with me. The typical blue form of *I. Madonna* is undoubtedly a true *germanica*, and a handsome garden plant.

There is also said to exist a white form of *I. germanica*, but so far I have never seen under this name any plant that was not either *I. florentina* or *I. albicans*, both of which differ from *I. germanica* in other respects than that of colour. W. R. Dykes, Charterhouse, Godalming.

THE ALPINE GARDEN.

RARE CORSICAN PLANTS.

CORSICA is the home of many rare and interesting plants, several of which are well worthy of a place in the smallest and most select rock garden. Among the better known plants native of this island is the charming Crucifer *Morisia hypogæa*, which produces its pretty flowers early in spring. Being neat in habit and free in flowering, it forms one of the gems of the rockery. Another dwarf plant of low stature is *Erodium chamædryoides*, which, with the little *Arenaria balearica*, is also found in the Balearic Isles. The yellow-flowered *Draba Loiseleurii* also comes from Corsica, while among bulbous plants from the same place may be mentioned the pretty *Crocus corsicus* and the tiny *C. minimus*, with the rich purple-flowered *Romulea Requiinii*. Among the larger growing plants *Helleborus corsicus* is very distinct with handsome foliage and numerous, greenish-white flowers produced in winter and spring. Of more recent introduction are the following three scarce and charming plants.

CHRYSANTHEMUM TOMENTOSUM.—The members of this genus are usually associated in one's mind with the popular greenhouse *Chrysanthemum*, but this little species is totally unlike *Chrysanthemum sinense*, being only 2 inches in height when in flower. It is closely allied to *C. alpinum*, which is found at high elevations on the European Alps. *C. tomentosum* is dwarf and tufted in habit, with densely tomentose pinnatifid leaves, giving the plant a hoary appearance like *Achillea umbellata*. The white flowers are $\frac{3}{4}$ inch in diameter, and are borne on stems about 1 inch in length. They are produced freely; the plant commences to flower in May, and keeps up a succession till September. *Chrysanthemum tomentosum* grows freely in a well-drained, gritty soil in a pan in a cold frame. It has not yet been determined if it will withstand the winter out of doors, but a dry, somewhat sunny and sheltered ledge should suit it. The species is endemic to Corsica, being found in pastures on the summits of Mount Renoso and Mount D'Oro.

ERODIUM CORSICUM (See fig. 82).—The genus *Erodium* contains many choice and useful plants for the rock garden, some of the less rampant growers being *E. chrysanthum*, with its yellow flowers and silvery foliage; *E. supracranium*, of neat habit and with pink flowers; *E. amanum* from Syria, with finely-cut silvery foliage and white flowers produced during the whole summer; and *E. Sibthorpium*. One of the smallest is *E. corsicum*, which grows from 1 inch to 4 inches high, and produces small orbicular ovate leaves, that are softly hairy and deeply crenated. The flowers are $\frac{3}{4}$ inch in diameter, and vary in their shades of rosy-pink, whilst the veins are of deeper colour. They are produced from May to September. The plant illustrated in fig. 82 was still in flower in the latter month. It is a free-growing, hardy subject, and soon makes a good tuft. Propagation is effected by means of cuttings inserted in summer or by seeds. *E. corsicum* is found growing on granite rocks by the sea, and makes a woody rootstock like many of the other species.

STACHYS CORSICA.—Unlike many of the better-known members of this genus *S. corsica* is a compact, low growing plant, 1 inch to 2 inches high, with small leaves and pretty, straw-coloured flowers with a purple lip. It is a choice little plant, found on the stony mountains of Corsica and Sardinia, and it is propagated easily by cuttings. It forms an ideal plant for growing in pans, flowering early and keeping up a long succession of bloom. W. I.

THE ROSARY.

AUTUMNAL ROSES.

THERE can be no question that the Roses which flower most freely in autumn are by far the most valuable for garden cultivation. Some of the loveliest of the Hybrid Perpetuals, such, for example, as Duke of Edinburgh, Duke of Teck, Horace Vernet, and Charles Lefebvre, have their first blooms too late to achieve much subsequently in this special direction, but there are exceptions to every rule, and A. K. Williams, for example, which too often comes somewhat early in summer with hardened, abortive buds, as if it had come before its proper season, is usually at its best during the autumn months. Perhaps, so far as regards southern Scotland at least, the reason may be that in September it experiences much more favourable atmospheric conditions than it does in July.

By far the most valuable Roses for autumn effect are the Hybrid Teas. At the present date (September 10), the variety which outshines all others in my garden for size and charm of form and complexion is Phariser, which I saw for the first time, and admired greatly, in Corsewall Gardens in this county about this time of last year. I acquired some strong plants of it immediately after seeing it there, and the variety has proved a great acquisition. So, also, has the famous Lyon-Rose, by reason of its unique beauty during the early summer months, and it promises to flower moderately well during the autumn, though its growth is not so vigorous (being somewhat lacking at present in foliage) as could be desired. A very fine autumn flowering Rose is Margaret, raised recently by Messrs. Wm. Paul & Sons at Waltham Cross. Mary, Countess of Ilchester, is a graceful Rose, with many of the attributes of a Hybrid Perpetual, but it is described by the raisers as a Hybrid Tea, although it grows with considerable vigour during June and July, it did not produce a single flower till the end of August, and even then it was exceedingly sparing of its blooms. Mrs. David Jardine is a very beautiful Rose, with similar limitations. There never was a period, in my estimation, when vigorous-growing, floriferous Roses were more greatly required. If we had a few more varieties with the glorious characteristics of La France, Viscountess Folkestone, Caroline Testout, Clio, Margaret Dickson, Prince de Bulgarie, Madame Pernet-Ducher, Corallina, Enchantress, and Phariser they would be prized immensely. But so long as we have such varieties as I have indicated, we need not complain. *David R. Williamson.*

MARKET GARDENING.

LATE TOMATO CULTURE UNDER GLASS.

IN market gardens Tomato plants raised from seed at about the third week in May, are planted in transverse rows, 2 feet apart, and at 1 foot in the rows in span-roofed houses, in which Cucumbers have been grown up to the end of the third week in July. The plants are supported individually by a soft kind of string (specially manufactured for the purpose), looped round the stems of the plants about 6 inches from the ground, and then secured to the wires fixed under the roof glass. The plants grow well in the rich soil used previously for Cucumbers, and with a free circulation of fresh air amongst them both day and night, make strong and sturdy growth, being furnished with large, strong trusses of flowers from within 6 inches or 9 inches of the ground upward. The lateral growths are kept persistently pinched out, in

order to concentrate all the energies of the plants into the production of large trusses of flowers and the development of heavy crops of well-shaped fruits. The soil in which the plants are growing should be kept uniformly moist by affording them clear water at the roots about three times in the week during favourable weather conditions. Some market growers twine the plants carefully round the individual string supports as they grow. But, in my opinion, the better way is to keep the plants in position by ties made of raffia coiled once round each string before making the several ties. The raffia should be placed immediately below each truss, in order to support the increasing weight of the developing fruit. As soon as the plants have set a couple of trusses of fruit each, a surface dressing of shore manure should be applied between the rows to the thickness of

A JOURNEY TO JAPAN.

SINGAPORE, THE QUEEN OF THE MALACCA STRAITS.

(Continued from page 196.)

I LEFT Ceylon, the island of many beauties, after about four weeks stay. The groups of Coconut Palms (*Cocos nucifera*) about the harbour furnished us with a last glimpse of the vegetation, and once more we saw the lofty mountains against the horizon, Adam's Peak, where Buddah is said to have first set foot on earth, dominating all. Three days later we passed the golden mountain of Sumatra, and on April 13 arrived at the picturesque island of Singapore, the cynosure of the Cambodian Peninsula. Owing to the reflection of the sun in the sea, the far-off islands seem to rise above the water, and, on the near



FIG. 83.—HOSEA LOBBIANA, AS PHOTOGRAPHED IN THE SINGAPORE BOTANIC GARDENS: THE FLOWER-RACEMES HAVE SALMON-ORANGE COLOURED BRACTS.

2 inches, after two or three of the bottom leaves have been removed from each plant to admit of a current of fresh air. It is well to allow a free extension of leaf growth until the time has arrived for letting in extra light and air in order to assist the fruits to ripen. Each time the plants are watered, after the top-dressing of manure has been applied, food will be washed down to the roots, and thereby add considerably to the ultimate weight of the crop. As the season advances, with a corresponding fall in the temperature, less fresh air should be admitted. After the Tomato plants are set out in the border, the soil between the rows and the plants should be trodden well, as this will induce a firm growth, and the flower clusters will form quite close to the ground. *H. W. Ward.*

islands, the Mangrove trees are seen singly and in groups. The entrance to the harbour of Singapore is like a garden scene; the Malay fishermen come in their small canoes and dive for halfpennies, whilst others bring large boats full of coral and fine shells gathered on the near island of Pulo Brani or Pulo Renggit. Singapore is the great centre for eastern trade and commerce, the harbour being of sufficient size to accommodate the largest fleet of ships. At few places in the world can one see persons of so many different nationalities. The town has the appearance of a thriving place, and the European dwellings, which extend for several miles to the north, are situated as in a large park. The air is fresh and cool, and the clouds absorb much of the sun's heat; only near the

shore is it uncomfortably hot in the sunshine. Trees and flowers embellish the gardens, the roads are maintained perfectly, and they are shaded by fine trees covered with Epiphytes, especially *Drymoglossum* Ferns and Pigeon Orchids (*Dendrobium crumenatum*), which are said to flower here every nine weeks. The Bird's Nest Fern (*Asplenium Nidus*) forms large masses on lofty branches, the nest-like repositories containing soil and debris which supply the plant with food.

THE BOTANIC GARDEN.

A road bordered by orchard trees leads to the botanic garden (Kebun bungah), "the garden of flowers," as the Malaysians term it. The gardens are partially laid out after the style of a European landscape, embellished with a wealth of tropical subjects. There is a rare collection of Palms. Dr. Ridley, the Director, is a great botanist and collector, and Singapore forms a fine centre for exploring the whole Malayan peninsula and the Malayan Islands, which stretch to Borneo, and north to Siam, and westward to Sumatra. He has discovered many fine novelties, including *Schizostachyum brachycladum*, the finest of the yellow-stemmed Bam-

tion, planted with useful plants, including numbers of Para Rubber trees. The surroundings of the town are interesting. Mangroves grow near the coast, but inland there is still virgin forest. The illustration at fig. 85 shows a giant tree of *Hopea Mengarawan*, and at its foot the native plant collector of the botanical garden. *Campnosperma auriculata*, with its giant leaves, is conspicuous, and *Gutta-percha* trees (*Ficus elastica*) were once common, but many have been destroyed. *Alsophila Scottiana*, *Nenga Wendlandiana*, *Zalacca edulis*, and *Mapania humilis*, a small *Pandanus*-like *Cyperus*, grow underneath the trees. In places where the water flows slowly over gravel and between fallen leaves and dead wood, grows, in deepest shade, *Cryptocoryne Griffithii*, with its yellowish-brown flowers just above the water. When the water rises suddenly, a bubble of air covers the entrance of the flower to protect it until fertilisation has been accomplished. *Barclaya Mottleyi* grows here also, and the rosy fruits rise above the shallow water at places where there is a little more sunlight. The flowers are very magnificent for a Nymphaeaceous plant, and the petals are deep purple. The fruit is divided into a number of

the town of Singapore, is interesting. A high wall confines the water in a lake, surrounded by most delightful scenery, including dense jungle. Rare *Utricularias* grow by the side or in the shallow water, raising their tiny, brown flowers above the surface. *Nymphaeas* do not grow in the island, as every pool of water is soon covered with dense grass. *Gleichenia linearis*, which, much in general appearance, is like *Pteris aquilina*, is very conspicuous, growing many yards high. *Monochoria vaginalis* grows in every ditch associated with *Brexia malaccensis*, species of *Eleocharis* and *Microcarpaea muscosa*. F. Henkel.

(To be continued.)

FORESTRY.

SEASONABLE WORK.

THE time is approaching when foresters should arrange their winter's work. No time should be lost in completing such operations as the trimming of hedges and rides of the coverts, as, when these are accomplished, the season for planting and the marking of timber and underwood commences. In the planting of forest trees, care should be taken to select such varieties of Conifers and any other trees that thrive in the particular district: some trees are suited only to clayey and others to dry soils. When unsuitable trees are employed, their failure is often attributed to lack of skill on the forester's part; whereas, probably, the employer has selected the kind of tree that may not be suited to the soil.

Great care should be exercised in the marking of saplings (or tillers) that are standing in the underwood, intended to be cut in the coming season. Choose straight-stemmed, healthy plants, and not off-shoots from a stem. How often one sees coverts that have been ruined through leaving too many saplings. In this district, some of the trees stand only 4 feet apart. Good timber cannot be expected from trees left in this manner, and what is to become of the underwood? Many will say, "Underwood does not pay." This is very true; but underwood is necessary where hunting or shooting is practised. It is a very good practice to examine the saplings again after the underwood has been cut, and thin them out a little more if necessary. Twelve to fifteen yards is quite close enough for trees in a covert, if a good underwood is desired. This distance does not apply to new plantations of Conifers or other forest trees where no underwood exists. A. Gooding, Earham House, Chichester.

FORESTRY IN SCOTLAND.

IN the course of his presidential address delivered before the Royal Scottish Arboricultural Society in February last, Sir John Stirling-Maxwell drew attention to the immediate needs of forestry in Scotland. After pointing out that the present is a favourable moment for initiating a forward policy, Sir John Stirling-Maxwell urged the necessity—as a first step in developing Scottish forests—of a survey of the ground adapted for tree-planting in Scotland. The popular idea that any waste ground at any elevation, may be utilised forthwith for tree-planting is not only erroneous, but mischievous. If silviculture in these Islands is to be restored to its proper position, it can only be done by the selection of suitable ground for planting, by the adoption of a proper rotation, and by the division of the land set aside for silviculture into areas which are to be planted annually.

After the survey Sir John Stirling-Maxwell considers that a demonstration forest is the most pressing need. Nor can it be doubted that this opinion is correct. Lectures and scientific instruction in the subject will not make trained foresters, and without foresters experienced in the practical management of trees any national scheme of silviculture is foredoomed.



FIG. 84.—PLANT SHELTERS IN THE BOTANIC GARDEN, SINGAPORE.

boos, from Sarawak; *Hosea Lobbiania*, from the same district, with most beautiful salmon-orange-coloured bracts all along the racemes of flowers (see fig. 83); a new tree-like *Impatiens*; and several other species.

Large, shady, and lofty conservatories, mostly without glass, provide shelter to many new plants (see fig. 84), besides fine collections of the better-known kinds. Some of these latter in flower included *Congea tomentosa*, a fine mauve-coloured creeper; *Holmskioldia sanguinea*, from India, with orange-red flowers; *Roupellia grata*, from Sierra Leone, with dark, glossy leaves and pale, mauve-purple, bell-shaped, flowers; *Cassia multijuga*, yellow; *Kopsia albiflora*, a well-known shrub, with flowers like those of *Bouvardia*; *Ixora macrothyrsa*, from the South Sea Islands, one of the most striking shrubs of the tropics, with orange-scarlet flowers; *Dipladenia Harrisii*; *Allamanda neriifolia*; and *Musandas*, especially *M. erythrophylla*, with deep, velvety-red bracts. Portions of the gardens consist of virgin forest, with a few paths leading through it. Tigers formerly existed in the island, and even now they swim over the Lohore Straits occasionally and frighten the inhabitants.

Adjoining the garden is an experimental sta-

well-marked carpels, which separate easily. It is rose coloured, and rises to the surface when ripening. The seeds are of the size of medium *Nymphaea* seeds, and are covered thickly with large and slender soft hairs and a sticky, white mass, which swells in water and keeps the seed floating for a long time, like the arillus does in *Nymphaeas*. The leaves are all under water, but, the water being very shallow, they are near the surface, and the direct rays of the sun reach them. *Cryptocoryne Griffithii* forms runners, and is of sturdy habit. The plant is covered all over with short hairs, and is quite different to a *Nymphaea* in general appearance. I have sent seeds to Kew and other places. In the tropics, most plants are exposed to more sun and light than they require, therefore, many of them do not expose the whole surface of their leaves to the sun. It is quite different in northern countries, and, to cultivate these water plants successfully, they need the most sunny situations.

Selaginella Willdenovii, the blue "Climbing Fern," is also seen growing, and *Nepenthes ampullaria* is quite common. *Pleurothallis foetida*, an interesting terrestrial Orchid, may be seen, but Orchids in general are rare.

The reservoir, containing the water supply for

SEED EXPERIMENTS WITH PINUS SYLVESTRIS.

An interesting experiment, as yet in its initial stages, is being conducted at Bangor in Wales and in various Continental investigation stations. The experiment in question is designed to test the truth of the common opinion that seed of the Scots Pine obtained from trees grown in Scotland yields the best plants. An account of the results obtained up to the present time is given by Mr. Fraser Story in the *Transactions of the Royal Scottish Arboricultural Society* (xxiii., Part ii., July, 1910).

For the purposes of the investigation seed was obtained from the following countries:—Scotland, France, Prussia (2), Belgium, Bavaria, Russia (2); the Scotch seed being supplied by Mr. J. Grant-Thomson, Granton-on-Spey. Mr. Story finds that, of the plants raised from seeds from the above mentioned sources, those from Scotch seed were at the end of two years smaller than any of the others; thus, at Bangor the average height of 2,445 seedlings from Scotch seed was 3 inches, whereas that of 2,520 seedlings raised from Belgian seed was 5½ inches, and the average height of the seedlings produced by seed derived from the other countries was intermediate between the Scotch and the Belgian seedlings.

At the end of the third year (first year after transplanting) the following averages were observed:—Belgian seed 10½ inches and Scotland 7 inches, and the estimate of the plants was that the Belgians were "much the best," Bavarian "second," and Scotch "small but good."

Similar, and in some respects more striking, results with respect to rate of growth were obtained in a series of experiments at Chozin (Prussia) whereas seedlings from Scotch seeds showed a growth of little over 2 inches, the Belgian plants grew to 7 inches.

It remains to be seen, of course, whether the Scotch seedlings will remain inferior in rate of growth to those derived from Belgian seed, or whether it is merely a case of making haste slowly.

TREES AND SHRUBS.

SPIRÆA AITCHINSONII.

This is one of the finest of the summer-flowering Spiræas, being at its best during July and August, when it forms a striking feature in the garden. It is a vigorous, tall-growing species, native of the Himalayan regions, and was introduced to this country at the time of the Chitral Relief Expedition. The plant attains a height of 10 feet or more, and has stout, glabrous stems furnished with pinnate leaves. Each leaf is composed of 15 to 19 linear-ovate leaflets, which are hairy beneath, glabrous and shining above, and toothed on the margins. The flowers are borne in terminal panicles from 9 inches to 18 inches in length, and are pure white. The wood is red and shining; the colour shows up well after the fall of the leaf. The plant does best in open situations, as it requires plenty of room to develop, being quick-growing. A stock is easily raised from seeds, which ripen in most seasons, but the plant can also be propagated by means of cuttings.

SPIRÆA DISCOLOR.

This plant, which is often known as *Spiræa arifolia*, is a native of North-western America. It is one of the tall-growing members of the genus, reaching a height of 12 feet and sometimes more. The stout stems are clothed with rugose leaves 2 inches to 3 inches long, according to the age of the branch, being largest on the young, strong growths. The foliage is woolly beneath, sparsely hairy above, and deeply-toothed or sometimes lobed on the margins. The flowering season is July, the inflorescences being feathery, terminal panicles 6 inches to 1 foot in length. The flowers are white on opening, but change to cream. The wood is dark-brown, ribbed, and more or less woolly. Propagation is effected by cuttings, which root readily at almost any time of the year. *J. Clark, Bagshot, Surrey.*

IN THE MARITIME ALPS.

FROM THE GESSO VALLEY TO THE UPPER BOREON.

In the neighbourhood of the Baths of Valdieri are chronicled so many interesting species that I thought I might as well make it the beginning of my researches into the wealth of the Maritime Alps, that earthly paradise of precious plants. But the Baths, and the granitic glens that radiate thence, only succeeded in showing me how "blasé" I had grown. For I found there, in rich luxuriance, only common plants, such as *Asphodel*, *Anthericum liliago*, *A. liliastrium*, *Lilium bulbiferum*, *Laburnum alpinum*, *Rosa ferruginea*, *Sap naria ocyroides*, *Lychnis flos-*

ever, I vainly toiled and toiled up stony gorges to the Lac de Portette without getting any better reward than a sight of *Anemone sulphurea* growing poor and plain in crevices of the granite cliffs.

From the lake I saw, far away, the Ciriegia Pass, by which I was to cross into the Upper Boreon Valley, and I trembled, for all the pass was snow, making an unbroken coverlet of white for *Viola nummulariaefolia*. However, in a day or two I took my companion firmly by the hand and proceeded with him over the Ciriegia. Up the Val Valletta the way is dull and flat, then violently it mounts over some three hours of snow-walking (July 13) to the summit of the



FIG. 85.—SCENE IN A SINGAPORE FOREST: THE LARGE TREE IS HOPEA MENGARAWAN.

(See p. 212.)

Jovis, and *Tulipa celsiana*. In rubble beds and slopes *Viola Valderia* grows, and in the Valasco valley, across the stream, a fine abundance at one point of *Saxifraga pedemontana*. This same valley gives, of course, the Primulas that I had grown to regard as ordinary (*P. graveolens* and *P. marginata*) and is given as a station for *Saxifraga florulenta*, though I, not yet knowing this plant's chosen home, never climbed the shady gullies high enough to see. No doubt it occurs there, for the Baths lie under the very shadow of the Argentera, the highest point of the range, and the centre of *florulenta*'s distribution. How-

pass (8,370 feet). Near the Col, however, some stone slopes were open, and we diverged to ransack them. *Saxifraga retusa* was there in flower, and we had our first real sight of the lovely little *Thlaspi limosellæfolium*, the Maritime Alp version of my cherished *Thlaspi* (*Iberidella*) *rotundifolium*. *T. limosellæfolium* really deserves a special note; it is an exquisite plant, narrow-leaved and green, instead of livid, fat-leaved, and succulent like the other; its flowers also tend to be of a lighter pink than *rotundifolium*, but have the same intense and delicious fragrance. It also differs in that it is sometimes found in

crevices, for *T. rotundifolium* never, I fancy, deserts the stone slopes, but, on the south side of the Ciriegia, *T. limsellæfolium* may be seen making sheets of colour in the crannies of the granite cliffs.

Meanwhile we were feverishly prying for the *Viola* among the tiny leaves that peeped here and there among the newly-uncovered stones. *Campanula stenocodon* was soon identified, but a little round-leaved plant, which ought to have been *Viola nummulariaefolia*, for a long time baffled us, for my companion had collected it bearing, apparently, a Crucifer's seed. However, my doubt about this remained deep. "Look again," I cried at last, "there is no Crucifer it could possibly be." We looked again; lo! the Crucifer pod belonged to a stray piece of *Hutchinsia*. Not only that, but the real plant carried the undoubted capsule of a Violet. *Viola nummulariaefolia* was discovered. However, I may leave this most indescribable and exquisite of Violets for a later account, when I shall have collected it in flower. It is a high Alpine among high Alpines, never descending from these exalted stone slopes, where it has good company. For, just to the left of the pass, rises the Mercantour, where *Eritrichium nanum luxurians*, and not a hundred miles farther on the greatest of great *Saxifragas* makes its august appearance in a crevice of the cliff. On the French side, the Ciriegia falls away in a slope of what looks like appalling abruptness; a snow-precipice it seemed as we began to descend delicately like Agag, and it was at that moment that I saw my first plant of *Saxifraga florulenta*, hailed it with a loud cry, and nearly caused my companion and myself to descend the Ciriegia with far more speed, and even less comfort, than we had climbed it. After this, time ceased. *Florulenta*, in its crannies, cries aloud for a hammer and chisel—one of the most ineradicable of plants, if one did not know *Phyteuma comosum*, *Daphne rupestris*, and *Androsace imbricata*.

The *Androsace* was there, too, by the way, curiously yellow in its bloom; but now no more regarded than silver in the days of King Solomon. Also the *Thlaspi*, in great beauty, and the *Viola*, here opening its first flowers.

At last, we descended again towards lower levels over a great snow-field, littered with black dead plants of flowered or barren *Saxifraga florulenta* washed down by the winter rains from their ledges. Where vegetation began again, we came on a very brilliant yellow *Senecio Doronicum*, wholly green of leaf, and on many good forms of *Gentiana acaulis*, which increased in abundance as the path rapidly descends, through *Viola Valderia* to *Viola calcarata* at the Pine-tree level. Far below, now, was seen the little Hotel Boréon-Cascade, and we dropped down towards it rapidly by many short cuts through a forest of Scots Fir, with rare undergrowth (among the Larches, higher up, for the most part) of *Pinus uncinata*. At last, the woods were done with, and through rich meadows of *Anthericum* and *Campanula* the path led placidly to the hotel. *Reginald Farrer*.

HARDY FLOWER BORDER.

RAISING SEEDLINGS OF PRIMULA JAPONICA.

THIS is one of the best times to sow seeds of this lovely hardy *Primula*, which is well worthy a place in any garden. The seed is most uncertain in germinating. In the autumn of 1907 I sowed a bed with seeds, and a fine batch of seedlings came up in the spring of 1908, and others in the two following springs, though the seed had lain two and three years respectively in the ground. I find, from long experience, the seed is much better sown in a shady place in the open than indoors, and if the soil is a little damp, so much the better. A very good plan is to enclose the seed bed with four sides of wood, like

the sides of a box, about 3 inches deep, and cover the frame with fine wire netting. Prepare some good soil mixed with leaf-mould for the seed-bed, flatten it firmly, and moisten it with water. Cover the seeds thinly with fine soil, and put on the wire cover to keep off the birds, with a layer of soot or lime around the outsides to prevent slugs. This plan saves a great deal of trouble, and involves little care; whilst if pots or pans are used, the soil is apt to get too dry, and the seeds, not germinating at once, are thrown away as useless. When the seedlings are large enough to handle, they should be transplanted in a bed of well-prepared soil, and given water in dry weather. About the month of August they will be large enough for planting in their permanent quarters, and on the treatment they receive at that stage depends much of the future success. The bed must be deeply trenched, and, if fresh manure from a byre can be obtained, a liberal supply of it dug in, but not too deeply. This will keep the roots moist in summer, and afford food, as the plants are gross feeders. The little seedlings should be lifted with good balls of soil attached to the roots, and afforded a good watering after planting. The stems and leaves die down in winter. There are some fine new strains of *P. japonica* and hybrids from this species. The flowers range in colour from deep crimson through shades of pink to pure white, the blooms being of a large size, and many of the flower-stems over 5 feet in height. The foliage is very handsome. It is a pity they are so rarely grown, and I believe the uncertainty in the seed germinating tells greatly against their popularity; but if the above directions are followed, this difficulty will be overcome. Like all other *Primulas*, seedlings give the best results, and it is advisable to sow seeds yearly. *J. Scott-Eliot, Teviot Lodge, Hawick, N.B.*

The Week's Work.

THE FLOWER GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Hertfordshire.

The shrubby Hibiscus.—The several varieties of *Hibiscus syriacus* or *Althæa frutex* are now making a fine display. The large, delicately-coloured flowers always evoke admiration, and the lateness of their flowering is an additional advantage. These shrubs require but little attention, and will succeed admirably in almost any position in the shrubbery, but they need plenty of room. Disturbance at the root should be avoided, and in dry weather they should be supplied with water, as they are easily injured by drought; a good mulch will assist in keeping the roots moist. Little pruning is required, as growth is somewhat slow. The varieties have single and semi-double flowers, ranging in colour from pure white to deep purple. Plants may be obtained in both standard and bush forms.

Violets.—Those plants which have been grown on in the open ground, as advised in a previous Calendar, to furnish a supply of flowers in winter, may now be transferred to the frames in which they are to flower. Shallow frames, containing a flow and return hot-water pipe, are the best suited for the purpose. The soil should consist principally of loam, with a liberal addition of mortar rubble and leaf-mould, and the nearer the plants are to the glass the better. Be careful not to crowd them, and, in transplanting, avoid damaging the roots, endeavouring to preserve a good ball of soil about them. Plant firmly and then give a copious watering. For a few days the lights may be kept on the frames, but directly the plants have recovered from their disturbance, an abundance of fresh air must be admitted whenever the outside conditions are favourable. When water is necessary it should be applied in the forenoon when the weather is most favourable. Keep the glass clean, so that when the lights are placed in position the maximum amount of light may reach the foliage.

The water garden.—The *Nymphæas* are passing out of flower, and the most attractive subjects are those with handsome foliage. Especially pleasing now is *Phragmites communis*, with its waving plumes, also the Giant Reedmace, *Typha latifolia* and the narrow-leaved *T. angustifolia*, *Miscanthus*, *Cyperus*, *Acorus*, *Scirpus*, and *Poly-*

gonum. *Rumex Hydrolapathum*, the Giant Water Dock, has exquisitely-coloured foliage, and the leaves of *Saxifraga peltata*. *Rheum*, *Gunnera*, and *Petasites gigantea* are also effective. Many hardy border perennials make fine subjects for the water's edge. *Senecio clivorum*, *S. Ledebouri* and *S. tanguticus* are each fine in their season, whilst clumps of *Lythrum salicaria rosea*, *Helianthus orgyalis*, and *Chrysanthemum maximum* produce a fine effect. *Pontederia cordata* is a good late-flowering aquatic plant.

Seasonable work.—The herbaceous borders will need a thorough overhauling, as a great many of the subjects have finished flowering, and all untidy flower growths, wherever possible, must be removed. I do not advocate the too-early removal of all the old inflorescences, preferring to allow them to wither naturally, as this benefits the plants. At this season we frequently experience slight frosts, but if a light covering is placed at night time over tender-flowering bedding plants such as *Heliotropes* and tuberous-rooted *Begonias*, it is possible to prolong their season of flowering for a time. Let there be no delay in taking any more cuttings that are required from the plants in the beds.

FRUITS UNDER GLASS.

By G. GOODACRE, Gardener to Sir ERNEST CASSEL, G.C.B., Moulton Paddocks, Newmarket.

Pineapples.—Plants that are swelling their fruits must be allowed plenty of heat and moisture. A bottom heat of 80° to 85° should be maintained with an atmospheric temperature of 70° at night-time, and a proportionate rise during the day. A few of the decayed leaves should be removed from the collar of the plants and any inert or sour soil replacing the latter with well-decayed horse-droppings mixed with rich, fibrous loam, pressing the new soil firmly about the base of the plants.

Successional plants.—Those that are making a vigorous growth should be given a little manure water at the roots, but care must be taken not to give too much, especially during a period of cold weather, or the soil will become sour, causing the young rootlets to suffer a check. Syringing overhead should be discontinued, and the night temperature gradually decreased. Any plants which have filled their pots with roots may be repotted into slightly larger receptacles. Suckers should be potted immediately the sap at the end is dried up, into 6-inch pots, these being of ample size at this time of the year. Pot firmly, employing a rather light, fibrous loam to which has been added a little bonemeal. Stand the plants quite close to the glass, and be specially careful to avoid overcrowding. Give a light spraying overhead twice daily, but little or no water will be required at the roots until the latter are growing freely. A light shading will be necessary during bright days until the young plants are fairly established.

Melons.—Plants of the late batch of Melons, which were planted about the end of August, are now showing the female flowers. No time should be lost in getting the flowers "set." During sunny weather, take advantage of the sun's heat to hasten the growth as much as possible, closing the house early in the afternoon, with plenty of atmospheric moisture. Care must be exercised in the use of the syringe now that the days are shortening, and, whilst having plenty of moisture in the house to counteract the effect of fire-heat, the foliage should be allowed to become dry before night; the roots should be kept in a moist but not sodden condition. Late batches of Melons are always an uncertain-crop, for, although the fruits may swell to a fair size, unless sunny weather prevails they are flavourless and insipid.

Perpetual-fruited Strawberries.—If the fruits have set well and are swelling freely, they may now be thinned, allowing not more than four or five on each plant. Support the truss with a forked twig. A sprinkling of some good artificial manure may be placed on the surface of the soil, and lightly forked in. Occasional waterings with liquid manure and soot water will also prove beneficial. When the fruits commence to colour use clean water only, and apply this with care, giving just sufficient to prevent the foliage flagging, and on fine days only. A free circulation of rather warm, dry air is necessary to obtain good flavour in the berries.

THE HARDY FRUIT GARDEN.

By A. R. SEARLE, Gardener to the Marquis of NORTHAMPTON, Castle Ashby, Northamptonshire.

Perpetual-fruited Strawberries.—These will soon be ripening some of their berries, and will need constant attention, as the weather may be damp and cold, causing the fruits to rot. If necessary, the plants should be given a copious watering. When this has been done, the ground about the plants should be sprinkled with a mixture of soot and fine soil (the soil being used to prevent the soot from being blown on to the fruits) to guard the fruits from the attacks of slugs. After the soot is applied, place some clean and moderately-short straw carefully around the plants to keep the fruits off the ground and to prevent them being splashed with soil by the rains. The trusses of berries may be raised by wire supports made for the purpose, and obtainable from the sundriesmen, or by small forked sticks. Small or deformed fruits should be removed. Should bad weather set in the plants may be protected by lights, which may be lodged on a few pieces of scantling fixed to supports 2½ feet in height at the back and 2 feet at the front. This method will be found better than placing frames or handlights over the plants, as it allows a free circulation of air about the plants at all times. A piece of netting should be placed at the sides and ends to protect the fruits from birds. Three good varieties are Laxton's Perpetual, St. Joseph, and St. Antoine de Padoue.

Dessert Pears.—These are now swelling freely, and the larger fruits will need to be supported. This is best done by tying a piece of matting around the stalk and fastening it to some part of the branch immediately above the fruit, or small pieces of fish netting may be placed under them, as in the case of Melons. The fruits should be exposed to the sun and air as much as possible, in order to obtain good colour and flavour. Trees that are ripening their fruits should be examined frequently and the ripe Pears gathered. It is easily determined when they are ready by gently lifting the fruit on one side, and if it is ripe the stalk will part readily from the wood. The borders in which late-fruited varieties of Pears are growing should be examined, and, if found to be dry, they should be afforded water or manure-water. Where birds are troublesome, it will be necessary to net the trees, using a mesh small enough to keep out tits, for these most troublesome birds have already commenced to peck Pears in these gardens.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor LAWRENCE, Bart., Burford, Surrey.

Odontoglossum.—Where *Odontoglossums* are cultivated largely, and especially where many species and hybrids are included, one or another will need some attention at the roots at all seasons of the year. Some of the plants that bloomed during last winter and early spring required that attention soon after they had recovered from the effects of flowering. Plants that are healthy and well established experience comparatively no ill effects by merely knocking them out of small pots and putting them directly into larger ones without any removal of the soil, but others that are shrivelled through overflowing or loss of roots, if repotted in hot, summer weather, with all the old soil shaken away from them, often take years to recover, and, in many cases, gradually dwindle away and die. It is advisable to overhaul such weakly plants during the month of September, as the weather is then generally more favourable to their recovery. At the present time there are large numbers of *Odontoglossums* that have started well into growth, among which, as a guide to beginners, some of the more common and well-known species may be mentioned:—*O. triumphans*, *O. Pescatorei*, *O. Hallii*, *O. tripudians*, *O. gloriosum*, *O. odoratum*, *O. ramosissimum*, *O. Edwardii*, *O. luteo-purpureum*, *O. hystrix*, *O. secptrum*, *O. Harryanum*, the numerous forms of *O. crispum*, and the natural hybrids *O. Andersonianum*, *O. Ruckerianum*, *O. Wilckeanum*, *O. excellens*, *O. Adriane* and *O. elegans*. Old and well-established plants that have their new growths too near the edge of the pot should be carefully turned out, and, if the soil is in good condition, the back portion only should be removed, leaving the front part practically undisturbed. Cut away the old back pseudo-bulbs,

leaving only two or three to support each leading growth. By this means the plant may be placed into the same sized pot again, but if the new growths promise to be exceptionally strong, the plant may be transferred to a trifle larger receptacle, avoiding over-potting at all times. The pots should be quite clean and dry, and, in the case of well-rooted plants, about half-filled with broken crocks, covered by a thin layer of Sphagnum-moss. A suitable compost consists of Osmunda fibre, Polypodium fibre, and Sphagnum-moss in equal proportions, and a moderate amount of small crocks to assist the drainage. Cut these materials up moderately finely and mix them well together. Previous to using the moss, let it be well cleared of leaves, rubbish, slugs, and small snails. For several weeks after the plants have been repotted, our practice is to examine them every night for the first appearance of slugs, for if these are caught early their increase is checked. During the autumn, as the nights become colder, it is advisable to look under the stages and on the walls, and floors, as slugs are apt to find their way into the house through the ventilators. Plants that have deteriorated should have all the decayed compost removed, dead roots cut off, and the entire plant thoroughly cleansed in water. Afford such plants additional drainage material, filling the pots to quite three-parts of their depth with clean crocks, using pots of as small a size as possible. When potting *Odontoglossums*, keep the base of the pseudo-bulbs on a level with the rim of the pot and press the compost down among the roots moderately firmly, but not so tight that water cannot pass freely through it. Afford the plants a good watering, and for several weeks afterwards apply enough water to encourage the Sphagnum-moss to grow on the surface. Syringe between the pots every morning when the weather is favourable, and again just before sunset; this last damping will cause the roof glass to be covered with condensed moisture, which is in every way favourable to the growth of the plants. Admit as much fresh air to the plants as possible through the lower ventilators, especially when the outside temperature is about 50°. When the temperature is higher than this, the air being calm and rain or heavy dew falling, the top ventilators may also be opened. The plants should be protected from strong light and sunshine until they have become well established in the new compost. The pseudo-bulbs that are cut off may be used for propagating purposes, fixing them firmly in pots filled with small crocks and keeping them always moist, or they may be placed on a bed of Sphagnum-moss or damp cocoanut fibre.

PLANTS UNDER GLASS.

By JOHN DONOGHUE, Gardener to JOSEPH PICKERSGILL, Esq., Bardon Hill, Weetwood, Yorkshire.

Richardia africana.—If these plants have been grown in beds out-of-doors during the summer months, the first opportunity should be taken for repotting them. This operation needs to be carried out a few weeks before the plants are to be removed indoors and they should be placed for that time under a north wall. Plenty of moisture must be afforded the roots. If early blooms are desired, these are more easily obtained from plants that have been repotted earlier in the season, as directed in a previous Calendar. The earlier plants are now filling the pots with roots, and may be afforded a liberal feeding with liquid manure from the farmyard. If blooms are wanted at Christmas time, the plants should be staged in a position as near to the glass as possible.

Cineraria.—These plants require a long season of growth, and a suitable position for them is on a layer of ashes in a cold frame. Regular attention must be paid to repotting the plants until the flowering stage is reached. Great care must also be exercised in affording water; the plants should be examined daily, and a good soaking given to those needing moisture. Aphids is often troublesome during the autumn and winter months, but this pest may be kept in check by frequent fumigations with a nicotine compound. The plants should be re-arranged frequently, as the foliage of healthy plants develops quickly. Ventilation must be afforded with care, in order to prevent cold draughts. If the plants are top-heavy, it is advisable to support them in the centre to a stout stake.

Codiaeum (Croton) and Cordyline (Dracena).—Cuttings of *Codiaeums* may be inserted in

60-sized pots, and rooted in a propagating case with a brisk bottom heat. The specimen plants should be allowed full exposure to the sunshine, in order that the leaves may develop a good colour. *Dracena* cuttings may be rooted in the same manner as *Codiaeums*, or old stems may be used for propagating purposes. These latter should be cut into pieces, each having one or two buds, placed into shallows pans or boxes filled with a sandy compost, and plunged in a brisk bottom heat. Ringing may be practised with unsightly plants of either *Codiaeums* or *Dracenas*.

Retarded plants.—Where cut flowers are required for autumn, successional batches of retarded crowns of *Lily-of-the-Valley* should be potted. The crowns should be unpacked immediately they are received from the nursery and placed into a water tank, for if the roots suffer from dryness, it will have an adverse effect upon the quality of the blooms. *Spiraeas* respond readily to gentle forcing, and are of great value for furnishing a supply of cut blooms. The pink-flowered varieties, such as *Peach Blossom* and *Queen Alexandra*, should be grown in a cool atmosphere, as excessive heat causes the colour to become pale. Keep the foliage of these *Spiraeas* as dry as possible, but supply the roots with as much water as they require, although it is not advisable to stand the pots in saucers, as is sometimes done. *Azalea mollis* may also be obtained in bloom during the autumn months. The variety of colour in the flowers is charming for winter decoration, but the blooms do not last long. *Lily-of-the-Valley* crowns may be forced into bloom in 21 days: *Spiraeas* require from seven to nine weeks, and *Lilium Harrisii* from 12 to 15 weeks.

THE KITCHEN GARDEN.

By JOHN DUNN, Kitchen Garden Foreman, Royal Gardens, Windsor.

Spinach.—Spinach sown a month ago will now be ready for thinning. Allow distances of 4 inches between the plants, and give light dressings of soot at intervals, also, hoe the ground frequently between the rows.

Winter salad.—Provision should be made now for the supply of salad through the winter months. If Lettuce were sown in August, the plants should now be ready for transplanting into cold pits. The soil in these pits should be raised to within 15 inches of the glass and made moderately firm before the plants are inserted. If cold frames are available, there need be little difficulty in maintaining a supply of salads throughout the greater part of the winter. Of Lettuces, the Cabbage type is the best; All the Year Round, Stanstead Park and Hardy Hammersmith are good varieties for the purpose. Damping is to be most feared in Lettuces in pits during the winter, therefore, sufficient space must be allowed between the plants for the air to pass freely amongst them. The lights should be left off the frames as long as the weather is favourable, but if wet weather occurs, they should be replaced, allowing ventilation both at the top and bottom of the pit. A sowing of Stanstead Park, Maximum and Brown Cos may be made now on a west border to provide plants for planting out early in the spring. Endive should be planted in cold pits and treated in the same manner as recommended for Lettuce. The Batavian variety is best for winter use, as it is not so readily affected by damp as the more tender sorts.

Spring Cabbage.—The principal plantation of Cabbage may be made now on ground which has been manured for a previous crop. Ground recently occupied by Onions will be suitable and will require little preparation beyond breaking up the surface with a fork. Plants stand the winter better on such ground than on that which has been trenched and manured for them. *Ellam's Early*, *Flower of Spring* and *Early Offenham* are reliable sorts. Allow a space of 15 inches between the plants, and let the rows be made 18 inches apart. The ground about Cabbage plants put out a month ago should be hoed frequently, and the plants sprinkled with soot. The soot will cause the foliage to assume a dark-green colour, and it will keep slugs and other pests in check.

Leeks.—Late plantations of Leeks must be supplied with sufficient manure water to keep them growing freely, and the soil between the plants should be stirred with the Dutch hoe.

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APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, SEPTEMBER 20—Nat. Dahlia Soc. Exh. at Royal Bot. Gardens, Regent's Park (2 days.)

SATURDAY, SEPTEMBER 24—Brussels International Show (Ex. of Fruit and Market Garden Produce) (4 days).

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich—55.9°.

ACTUAL TEMPERATURES:—LONDON.—Wednesday, September 14 (6 P.M.): Max. 60°; Min. 51°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, September 15 (10 A.M.): Bar. 30.2; Temp. 61°; Weather—Dull.

PROVINCES.—Wednesday, September 14: Max 58° England E.; Min. 52° Elgin.

SALES FOR THE ENSUING WEEK.

MONDAY, TUESDAY, WEDNESDAY, THURSDAY AND FRIDAY—Dutch Bulbs at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.

TUESDAY, WEDNESDAY, THURSDAY AND FRIDAY—Unreserved Sale of the Whole of the Plants in Pots at St. John's Nurseries, Worcester, by order of the Receiver *re* R. Smith & Co., Ltd., by Protheroe & Morris, at 11.30.

THURSDAY AND FRIDAY—First Portion of the "Lytham Hall" Collection of Orchids, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 1.

Forestry Experiments in Britain.

In the course of a valuable paper published in the *Journal** of the Board of Agriculture, Messrs. Robinson and Lindsay Watt draw attention to the present lack of data with respect to forestry results in Great Britain, and point out how important it is that all available information with respect to results actually obtained should be collected and published. The article by Messrs. Robinson and Lindsay Watt provides a contribution of this kind, and consists of an interesting account of a successful plantation of Larch and Spruce at a high altitude. The plantation in question, called the Coombe Plantation, was begun in 1848, and completed in two years. Mr. R. D. Marshall, of Castlezza Manor, Keswick, remembers seeing the planting upwards of 60 years ago, and is now witnessing the clear-cutting of the wood. The interest attaching to the plantation is two-fold. In the first place, the locality in which the plantation is situated is typical of thousands of acres of land in the Lake District, which is let at present at the rate of 2s. per acre. Hence, the complete records of the plantation should prove of service in case any large scheme of afforestation is contemplated for the district. In the second place,

Mr. Marshall has kept accounts of costs and returns, and has also, since 1873, picked out experimental groups of trees, of which he has measured the girth periodically. The area planted is 198 acres, and the altitude of the plantation ranges from some 900 feet to 1,500 feet above sea level. The illustrations accompanying the article give clear evidence of the need of providing Larch with wind-breaks, for, whereas, at elevations of 1,500 feet, the trees on the outside of the wood are streamer-like bushes of 5 feet to 8 feet in height, those growing at about the same altitude, but sheltered by Spruce on the windward side, are of normal development, and attain a height of from 30 feet to 35 feet. It is particularly interesting to find that, though Larch canker is present in the wood, the Larch that have been attacked by the parasite have, apparently, got the better of the disease, and that the trees have recovered from the damage inflicted on them by the large Larch sawfly (*Nematus Erichsonii*), which practically defoliated the trees in the autumns of 1907, 1908 and 1909. We have, in this latter fact, a striking example of the advantage which a Conifer derives from the adoption of a deciduous habit, for, as Professor Groom has pointed out in his recent articles on Conifers which appeared in these columns, defoliation of an evergreen Conifer is likely to be fatal, owing to the slow development of new leaves. The general conclusion reached by Messrs. Robinson and Watt is that the locality in which the plantation is situated is well suited to the growth of Larch, and that this is demonstrated by the general absence of disease, and by the dimensions reached by the trees. Under the most favourable conditions, they attain a height of 78 feet, and a girth (4 feet from the ground) of 54 inches—this in the course of 62 years. Whereas the Larch thrives best in somewhat sheltered hollows, doing well in breezy, but not in windy situations, the Spruce grows well at all elevations, and attains a greater volume than the Larch. We cannot attempt to summarise here the results indicated by the measurements of the trees on the experimental plots, but recommend those interested in the subject to consult the original paper. The financial account of the plantation, which will appear in the forthcoming issue of the *Journal*, should prove of no less interest and value than the present general account on which these notes are based.

OUR SUPPLEMENTARY ILLUSTRATION represents two fine varieties of *Miltonia vexillaria*, for which Mr. H. G. ALEXANDER, Orchid grower to Lieut.-Col. Sir GEORGE L. HOLFORD, K.C.V.O., was awarded a Cultural Commendation at the Royal Horticultural Society's meeting on June 7 last, the variety *Snowflake* securing an Award of Merit on the same occasion. Similar specimens of *Miltonia vexillaria* were staged by Mr. ALEXANDER at the Temple Show, May 28, 1907, in the group to which the Veitchian Cup was awarded, the plants collectively having about 150 flower-spikes, the largest specimen bearing 18 spikes, with an aggregate of about 100 flowers. The finest varieties were the deep magenta rose *M. vexillaria* Empress Augusta Victoria, the large white-lipped *M. v. Cobbiana*, the white *M. v. virginale*, and the superb *M. v. Westonbirt* variety, which secured a First-class Certificate at the same show. *M. vexillaria* gives a severe test to cultural skill, and no higher testimonial in that direction could be given to Mr. ALEXANDER than the evidence of these plants, which flower so abundantly year after year and yet continue to grow with increased vigour.

OLD KEWITE AS MAYOR.—Mr. JAMES LEIGHTON, who left the Royal Botanic Gardens, Kew, in 1880, has just been elected Mayor of King William's Town, South Africa. Mr. LEIGHTON proceeded to Cape Colony after he had completed his period at Kew, and he has a nursery business in the town which has recently honoured him by electing him chief magistrate.

MONUMENT TO GEORGE DON.—On the 8th inst., at Forfar, a monument was unveiled to GEORGE DON, a Scottish botanist, who lived at the commencement of the last century. The following particulars are taken from the address read at the unveiling of the monument, being compiled by Mr. G. CLARIDGE DRUCE, M.A.:—"He is said to have been born in the parish of Mennair in this county (Forfarshire) in 1764, to have been educated in this ancient borough, then apprenticed to a clock-maker at Dunblane, where he made his first hortus siccus. As a journeyman he lived in Glasgow, and afterwards, as a gardener, he went to Dupplin Gardens, near Perth, using his scanty leisure to explore the Ochils, where he discovered *Myosotis repens*. He also discovered the minute moss now known as *Anodus Donianus*, which fruits in December; and the fact of finding it was so well remembered by him, that 25 years after he pointed out the rock on which it grew to his friends the MILLERS, and by their aid was thus able to secure specimens for his *Herbarium Britannicum*. Here, too, he met CAROLINE STEWART, who long afterwards, in 1792, became his wife. On leaving Dupplin, he went to the garden of Lord PLYMOUTH, at Hewell Grange, in Worcester-shire. He passed through Oxford, noticing the Oxford Ragwort on the walls of that classic city. He was six months at Broadworth, near Doncaster, and about 1786 must have been in London, for he records several species seen growing near the great Metropolis. He settled in Forfar, and in 1797, with a small sum of money he and his wife had saved, leased for a term of 99 years two acres of land, called the Doo Hillock, from Mr. GRAY, of Carse. This sloped westwards to what at that time was Forfar Loch. Here he lived in comparative penury, selling vegetable and plants. He made an artificial pond, in which he grew aquatics, while in his borders he planted his Alpines. He continually explored the Highlands of Clova, and, in fact, first made known the rich botany of his native county. He frequently absented himself for a week at a time, his plaid and a bag of oatmeal or bread and cheese affording him shelter and food; and so thoroughly did his hobby occupy his thoughts that he lost count of the days. In 1802 he removed to Edinburgh, having been appointed superintendent of the Royal Botanic Garden; and left his Forfar garden in the care of his father. In 1803 he was elected an Associate of the Linnean Society in recognition of his service to botany. In 1804 he began the publication of his *Herbarium Britannicum*, a Fasciculus of British Plants, dedicated by permission to Sir JOSEPH BANKS. Of this work he issued nine parts. DON did not long remain in Edinburgh; perhaps his independent spirit bore badly the restrictions which his position imposed, possibly his political principles were not popular, but more probably the small stipend of £40 a year was found to be insufficient to keep his wife and family in the city; at any rate, about the end of 1806 he again returned to this town, continuing his occupation as a florist, and sending out plants and specimens to many correspondents, in particular to the Countess of AYLESFORD, who was making water-colour drawings of British plants, which are still in the possession of her descendant, the Earl of DARTMOUTH. The plants, 120 in number, instead of being thrown away were dried and preserved in her herbarium, which subsequently belonged to her descendant, Miss C. E. PALMER, of Odiham, who recently

gave them to me. Don contributed an account of the *Native Plants in the County of Forfar, and the Animals to be Found There*, to *Headrick's General View of the County of Angus*, which appeared in 1812. He also, in 1811, wrote a paper *On the Varieties of the Pinus Sylvestris or Scotch Fir* to the *Memoirs of the Caledonian Horticultural Society*, published in 1814—a valuable and a suggestive contribution to botany, which hitherto has not received the attention it deserves. Despite his exertions, and the fact of his garden at Forfar being well stocked with a large variety of plants, Don made no headway in business, and eventually in 1812 he had to make some arrangement with his creditors, a blow from which his sturdy, independent and somewhat choleric temperament never recovered. In the autumn of 1813 he returned from one of his mountain expeditions with a severe chill; this being neglected grew worse, and, after six weeks, he died in abject poverty on January 15, 1814.”

GOLD FISH.—Although gold fish were probably introduced into England from China so long ago as 1611, there was but little interest in them until about 50 years ago. The Japanese and Chinese, on the contrary, have indulged in the rearing and breeding of fish in confinement for many centuries, and as a result of careful selection have succeeded in evolving many extraordinary quaint and beautiful varieties, of which the specimens at the Japan-British Exhibition afford interesting examples. While the Chinese appear to devote their attention chiefly to the production of fish of abnormal hues, the Japanese have achieved success mainly in the rearing of specimens of curious shape and possessing abnormal fins. The Telescope Fish—a variety of gold fish with projecting eyes and extensive tail—being an extreme example. So extensive is this form of pisciculture in Japan that the fish described may well be included among the products of that enterprising country. Some difficulty was necessarily experienced in transporting these rare fish from the Far East to their home at the White City, but so successful was the experiment that fully 50 per cent. arrived in this country in perfect condition, and have now apparently become thoroughly acclimatised, and have multiplied to such an extent that shoals of tiny fry may be seen darting hither and thither in the miniature lakes at the exhibition.

HYBRID POTATOS. The Rev. J. ACKMAN PATON gives in the current number of the *Journal* of the Royal Horticultural Society (xxxvi., i., p. 127) an account of his recent experiments in crossing species of *Solanum*. As the author points out, the ordinary commercial varieties of the Potato are by no means convenient subjects for the experimental investigation of unit, hereditary characters, for they themselves are hybrids and require to be self-fertilised, and their descendants classified before they could be made to serve this purpose. Of the species-crosses made by the Rev. J. PATON, that between the white-flowering *Solanum Commersonii* and *S. tuberosum* (wild Mexican form) yielded 12 berries, containing in all 33 seeds. From this seed, nine plants were raised. These F_1 plants have yielded numerous seed-berries, so that there should be a considerable number of F_2 plants on which the Rev. J. PATON will be able to pursue his interesting investigations. The most striking feature exhibited by the tubers produced by the hybrid (F_1) plants is their apparently complete immunity from late blight (*Phytophthora infestans*). Should they stand the test of further trials, with respect to immunity from this disease, the hybrids will undoubtedly prove of the highest commercial value, either for their own merits or for their use in crossing with cultivated varieties.

CHALK AS A DRESSING FOR LIGHT SOILS.—From experiments made by Mr. JOHN HUGHES, agricultural analyst for Herefordshire, it would appear that finely-ground chalk will prove of considerable value for dressing light soils. Though chalk is very insoluble in pure water—being 27 times less soluble than quicklime—it is, according to Mr. HUGHES, almost as soluble as the latter substance in a dilute solution of citric acid (.1 per cent.), which supplies a close approximation to the solvent powers of soil water. Instead of the usual dressing of 10 cwt. per acre of ground lime, an application of finely-ground chalk, at the rate of 1 ton per acre is recommended. The chalk dressing has the advantage of being easier of application and less costly than quicklime. Its action, however, in decomposing the humus of the soil would be slower than that of quicklime.

A PLANT CATALOGUE.—It is a pleasing indication of the public interest in plants that the authorities of many of the public parks find it necessary to publish catalogues of the plants growing in their grounds. There is much information which visitors are anxious to obtain that cannot be supplied by means of an ordinary label, and it is found that catalogues are the best means of affording it. Mr. D. BLISS, the superintendent of the Parks Department, Swansea, has just published a catalogue of the trees, shrubs, herbaceous and Alpine plants at present growing in the Cywmdolau Park, Swansea. The botanical name (and in many instances the Natural Order), together with the common name and country of origin, are given for each species. Nearly 2,000 species are enumerated, and the price of the catalogue is one penny. We feel sure it will prove of great value to interested visitors to Swansea's most beautiful park.

WART DISEASE OF POTATOS.—A pamphlet issued by the Harper-Adams Agricultural College, Newport, Salop, gives an account of experiments made with the object of testing the effect of fungicides on plants affected by wart disease (black scab), and of determining which varieties of the Potato are most resistant to the attack of the fungus (*Chytridium endobioticum*, Percival) responsible for wart disease. After describing the symptoms—now well known—of black scab, a brief account is given of the modes by which the fungus spreads from one place to another. The agents responsible for the distribution of the spores are animals, manure, and “seed.” Thus it has been demonstrated that pigs and poultry straying from infected gardens may carry the spores and thus spread the disease. Again, manure from animals fed on diseased tubers contains the resting spores, and if used on fresh soil may give rise to infection. In particular, seed tubers from diseased Potato crops are responsible for the dissemination of the disease. In Shropshire, black scab is confined practically to gardens and allotments on light soils, and occurs mainly in the north and east of the county. No fungicide of the many tried in the course of the investigation has been found to have a decidedly beneficial effect in reducing the disease, though a summer dressing of copper sulphate destroys the motile spores liberated during that period. More definite results have been obtained from the testing of relatively immune varieties, and it is recommended, in consequence, to grow Southern Queen and Southern Star as early as with Conquest for the main crop. Of late varieties, Abundance, Langworthy, and Peacemaker showed a superiority with respect to resistance over the other varieties which were tested. Those interested in the subject are recommended to apply to the college for a copy of the pamphlet, which, we understand, will be sent to applicants free of charge.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

SCARCITY OF WASPS.—Certainly wasps are scarcer than usual. I predicted a plague this year, seeing the number of queens in spring. We killed very many in the gardens. Last year, blue-bottle flies attacked the Grapes in three of our vineries, and the damage they did in a short space of time was astounding. We trapped them in bottles of sweetened beer, but although we captured a great many flies, I am of the opinion (as in the case of wasps) that the traps also entice them to the fruit. In regard to Mr. Oldham's query (p. 204) as to the scarcity of bees being the cause of his Scarlet Runner Beans failing to set, I do not believe the honey bee visits the flowers of Scarlet Runners. I have eight hives in these gardens, and I have never seen any honey bees on my Runner Beans, but they are often visited by bumble bees. This season our Runner Beans have yielded a remarkably heavy crop. J. S. Higgins, *Big Gardens, Cwmbran*.

THE LATE THOMAS FRAZER OF WISLEY GARDENS.—The news of Mr. Frazer's death will be learned with great regret by all who have visited the Royal Horticultural Society's gardens at Wisley. Although he had been seriously ill for some time previously, Mr. Frazer returned recently to his labours in apparently greatly improved health, but he died somewhat suddenly on the 7th inst., to the great grief of all his colleagues. Mr. Frazer was 51 years of age. He had been a member of the gardens staff almost from their first occupancy by the Society, and he possessed a wide knowledge of hardy plants. To the great number of Fellows visiting the gardens, he was a genial and a greatly-respected guide, and his loss will be widely felt. A. D.

POMPON DAHLIAS.—Whilst inspecting the trials of Single Dahlias (see p. 222) on Monday last at Messrs. J. CHEAL & SONS Nursery, I was impressed with the effectiveness of the Pompon varieties for garden purposes. This type has stiff, erect stems carrying the neat, rotund flowers, well above the foliage. Amongst the more notable varieties were Mars, Daisy, Elsa, Minnie, Nerissa, Virginia, Zerlina, Tommy Keith, Mignon, Emily Hopper, Crusoe and Adelaide. Of the Cactus-flowered varieties the following half-dozen were carrying fine show-flowers on good stems well above the foliage:—Mrs. Paton (scarlet), Mrs. Landale (yellow, heavily flushed with pink), Snowdon (white), Mrs. J. H. Usmar (coppery-orange, suffused with coral pink), Hon. Mrs. Greville (orange-yellow, suffused with salmon), and Buttercup (rich yellow. *Visitor*).

ROCHEA FALCATA.—It has never been my good fortune to see finer examples of this pretty South African succulent than those exhibited by Messrs. STUART LOW & Co., at the meeting of the Royal Horticultural Society on August 30. Bearing in mind the attractiveness of *Kalanchoe flammea* I was, from a distance, prepared to find another new species of *Kalanchoe*, but closer inspection revealed the fact that it was a very old friend, namely, *Roehea falcata*. The species is too well known to need any exhaustive description, therefore, it will suffice to say that it forms a stout, erect stem clothed with very succulent, curved leaves. The individual flowers are small, but they are packed closely together in a large, flattened head. They are of a brilliant red colour, with conspicuous bright yellow anthers. From one head of bloom a succession is kept up for some time. This *Roehea* is of easy propagation and culture, the essentials in order to ensure blossoms being plenty of air and sunshine. In some places it flowers well out of doors. The *Kew Hand List* includes this species in the genus *Crassula*, while the well-known *Crassula* or *Kalosanthes coccinea* is referred to *Roehea*. W.

THE OLD SOLDIERS' GARDENS AT CHELSEA HOSPITAL.—A considerable amount of interest is just now centred in the grounds attached to the Royal Hospital at Chelsea, as being the place selected for the holding of the International Horticultural Exhibition, 1912. Adjoining are the Ranelagh Gardens (which will also be used for the exhibition), at one time a place of popular

resort, but now open to the public, and a portion is set apart as gardens for the pensioners in Chelsea Hospital. There are about 150 plots, varying somewhat in size and occasionally in shape. Each one is regarded as the property of a soldier, to cultivate and treat as he thinks fit, that is, while he remains an inmate of the hospital and is physically capable of attending to his garden. The men are allowed to sell the produce, and thus obtain a little pocket money. The residents of the neighbourhood, as well as visitors, are good customers of the soldiers, and may be seen carrying away nosegays, a Lettuce, or a bunch of Radishes. At the present time the small gardens are gay with Dahlias, Perennial Sunflowers, Solidagos, and Michaelmas Daisies. Numerous annuals are grown, and showy heads of perennial Phlox assert themselves at a distance. Earlier in the season a brisk business is done in rooted plants of such things as Creeping Jenny (*Lysimachia nummulariaefolia*) and Musk (*Mimulus*), both of which admit of ready increase. Besides Lettuces and Radishes, Turnips, Onions, Kale, and in one instance, at least, Red Cabbage, were noted. There is, I believe, a series of prizes awarded during the summer to the holders of the best-kept plots.

Correspondent.

CIMICIFUGA RACEMOSA.

THE *Cimicifugas* are hardy plants, and most of them are natives of North America. They closely resemble one another, differing mainly in height, season of flowering and in the purity of their colouring. With their long flower-heads composed of countless, small, white blossoms, they have a great likeness to *Spiræas* of the *Arunus* type. They are near relatives of the *Actæas*. Considering their handsome appearance, it is strange that they are so seldom seen in gardens, but perhaps this may in some measure be due to their popular names of Snake-root and Bugbane. The most ornamental species is *C. racemosa*, a plant that was introduced into this country from North America in 1732. This, when it is thoroughly happy in its surroundings, will attain a height of 8 feet, and with its dozen or more tall flower-stems, terminated by slender bloom-racemes, some of which bend over gracefully, it presents a strikingly effective picture. Though the plants will grow in a border, they are much injured by drought, and in dry weather have a miserable appearance. They enjoy rich, damp soil and summer shade, such as would be thrown by a deciduous tree, and were they planted in the drier portions of the bog-garden or used for the ornamentation of the margins of lakes and streams in conjunction with *Spiræas*, *Iris*es, *Lilium*s, *Osmunda*s and such plants, they would soon become popular, as in such positions their grace and beauty are apparent. In an ordinary way there is no need to grow more than one or two species, as they are all much alike in general character, and flower much about the same time, which is from July till October. *C. racemosa* has a handsome mass of broad and much-divided leaves, and produces stout, branching flower-stems feathered with white blossoms. The plant succeeds best in rich, moist woodland, where, in the more open spots, it becomes as wild as in its native woods. It is an admirable wild-garden plant. It is just the subject that should be selected for an open part of the wood, where it is not liable to be over-run by hungry roots. In such a site it will grow into a stately clump in a few seasons. *C. racemosa* is sometimes grown under the name of *C. Serpentaria*, a title which is said to be derived from the bending and twisted appearance of some of the bloom-racemes. Some are of opinion that *C. Serpentaria* is a finer plant than the typical *C. racemosa*. Other species are *C. americana*, *C. cordifolia*, *C. davarica*, *C. elata*, *C. foetida*, *C. japonica*, and *C. simplex*. Wyndham Fitzherbert.

SOCIETIES.

ROYAL HORTICULTURAL.

SEPTEMBER 13.—The fortnightly meeting took place on Tuesday last, the Hall being filled with a bright display of flowers and fruits. Dahlias and other out-door flowers predominated, and the principal novelties were also Dahlias, no fewer than 11 Awards of Merit being granted to new varieties by the FLORAL COMMITTEE out of a total of 14 made in this section. A Gold Medal was also granted for a display of these autumn flowers.

There were several important displays before the ORCHID COMMITTEE, and this body gave two First-class Certificates, three Awards of Merit, and one Botanical Certificate.

The FRUIT and VEGETABLE COMMITTEE had rather more than usual to inspect. The chief

sides these they had many very large clumps of *Nerine Fothergillii* major, each plant bearing a profusion of flower-spikes. (Silver Banksian Medal.)

Messrs. STUART LOW & Co., Enfield, had many varieties of perpetual-flowering Carnations attractively arranged in vases with greenery.

Messrs. H. B. MAY & SONS, The Nurseries, Edmonton, showed brilliantly-coloured *Codiaeums* (*Crotons*) in a bank of beautiful decorative Ferns. The *Codiaeums* were fine examples of good culture, and included such sorts as *Resplendent*, *Thomsonii*, *Alexander III.*, *Warrenii*, *chrysopetalum*, *B. Comte*, *Reidii*, and *Edmontonense*. (Silver Banksian Medal.)

Mr. A. LL. GWILLIM, Cambria Nursery, New Eitham, Kent, exhibited a large number of tuberous-rooted *Begonia* blooms on boards. They had double and single varieties in many pretty shades of colour. (Bronze Flora Medal.)



[Photograph by Wyndham Fitzherbert.]

FIG. 86.—CIMICIFUGA RACEMOSA; FLOWERS WHITE.

group was an exhibit of fruit trees in pots, for which a Gold Medal was awarded. Two First-class Certificates were given to varieties of Apples, and Awards of Merit to two Potatoes and a seedling culinary Pea.

At the 3 o'clock meeting a lecture on "Roses" was delivered by Mr. George Laing Paul.

Floral Committee.

Present: W. Marshall, Esq. (Chairman); and Messrs. H. B. May, J. Green, T. W. Turner, C. T. Druery, R. C. Reginald Neville, J. T. Bennett-Poë, W. Howe, J. Jennings, J. F. McLeod, W. T. Ware, C. R. Fielder, W. Bain, Charles Dixon, George Gordon, J. Hudson, A. Turner, H. J. Jones, H. J. Cutbush, W. J. James, Charles E. Pearson, E. H. Jenkins, and Charles Blick.

Messrs. JAS. VEITCH & SONS, LTD., Chelsea, staged a bright group of Zonal Pelargoniums with banks of showy-flowered *Cannas* interspersed, and a row of tall plants of *Plumbago capensis*. Be-

CLEMATIS.

Mr. L. R. RUSSELL, Richmond Nurseries, Richmond, Surrey, showed a capital floor group of Clematis plants. The following varieties were well flowered:—*Lady Northcliffe* (bright blue), *Mme. Ed. André* (purple-crimson), *Jackmanii* (snow-white), *Jackmanii rubra*, *Jackmanii superba*, *Nellie Moser*, *Mme. Van Houtte* (single white), *Lady C. Neville* (light blue with a darker stripe on the segments), *Enchantress* (a semi-double, white flower), and *Beauty of Worcester* (one of the brightest blue-coloured Clematises). (Silver Banksian Medal.)

ROSES.

Messrs. PAUL & SON, The Nurseries, Waltham Cross, made a very large and beautiful display of Roses. They were chiefly of the hybrid Tea and hybrid Perpetual sections. We noted the following varieties in extra fine specimen blooms:—H.T.s: *Königin Carola* (a lovely pink variety), *Cynthia*, *Paul Lede* (salmon-yellow), *Marquise de Sinety* (rich yellow), *Mme. Leon Pain*, *Mme.*

Edmee Metz (blush), Pharisæer, Lyon Rose yellow-salmon), Viscountess Folkestone, Dean Hole, Souvenir de President Carnot, Mme. Ravary, Mrs. David Jardine (a flat flower of a blush tint), Prince de Bulgarie, and Liberty. H.P.s of fine quality were: Suzanne M. Rodocanachi (a well-known, bright-crimson-flowered Rose), Hugh Dickson, and General McArthur. Messrs. Paul's new climbing variety, Florence Haswell Veitch, is a fairly double flower of a rich crimson colour, very pretty when half-expanded, and a welcome addition to its class, for it possesses fine fragrance. (Silver Flora Medal.)

DAHLIAS.

Messrs. BAKER, Wolverhampton, made a large display with Pæony-flowered varieties. As regarded the colours, the flowers were striking. The following were the more effective:—Pink: Mrs. R. Copeland, Lady Norman, Mrs. W. E. Whineray, Baroness de Türkenheim, and Mrs. Mundy. Yellow: Rytton Roy, Hyde Park Gem, Codsall Gem, and Hon. Mrs. Walter Forbes. Purple: Mrs. Gilmour, Mrs. R. Heaton, and Queen Emma. Crimson: Germania, Mrs. R. Cooke, and Viscountess Wolverhampton. Orange-red: Viscountess Newport, Sunset, and Romola Piazzini. White: Mrs. E. Cragg and Lady Muriel Paget. (Silver Banksian Medal.)

Messrs. J. CHEAL & SONS, Crawley, staged an enormous number of Cactus, flat and thread-petalled, single-flowered and pompon varieties. Of the thread-petalled, we observed the new variety Mrs. Landale. Others of this section are Sultan (deep crimson), Rev. T. W. Jamieson (rose-pink), Flag of Truce (white), and H. H. Thomas. Of single-flowered varieties, the more regular in form and distinct in colour were Tugi San, the florets of an orange colour, with crimson zone around the centre; Miss Moreland, a bright-crimson flower; Lady Bountiful, rosy purple, having a deep-crimson zone; Elaine, pure white; and Winona, very dark crimson. This firm likewise showed Pæony-flowered Dahlias about two dozen in all, rather bizarre in appearance when compared with the more symmetrical, refined Cactus, single-flowered, and pompon varieties.

Messrs. CARTER, PAGE & Co., of London Wall, E.C., showed an immense bank of Dahlias against the wall at one end of the Hall. These consisted of nearly all types in every shade of colour. The flowers were inserted in earthenware vases of a green colour, and they had as foils small-leaved greenery of various kinds—Ampelopsis, Asparagus, Ivy, &c. (Gold Medal.)

Messrs. BURRELL & Co., Howe House Nursery, Cambridge, exhibited a few thread-petalled Dahlias, and two of the varieties are mentioned in our list of those granted awards.

Messrs. J. STREDWICK & SON, St. Leonards-on-Sea, showed 10 varieties of Cactus Dahlias, and among these were H. L. Brousson, a rosy-purple flower with white tips, and Sweet Briar, the colour of old rose.

Messrs. WHITELEGG & PAGE, nurserymen, Chislehurst, exhibited 18 Pæony-flowered varieties. This firm also showed a number of blooms of the annual branching Aster M. Nicholls; the pink blooms are very double, and the plant grows to a height of 3 feet.

Mr. T. WEST, Brentwood, showed Dahlias in variety. (Silver Banksian Medal.)

SWEET PEAS.

About 40 vases of these flowers were shown by R. FELLOWS, Esq., Norwich, in great variety of colour. Good examples were observed of Earl Spencer, Zephyr, Rosie Adams, Constance Oliver, Geo. Herbert, Tom Bolton, a very dark crimson variety; St. George, Mrs. Andrew Ireland, Evelyn Hemus, Leslie Smith, a seedling, a choice light-pink flower; Chastity, a fine white, having a faint tint of pink, and Lady Beatrice, a seedling of promise. (Silver Flora Medal.)

Another display of these flowers was made by W. R. HAMMOND, Esq., Burgess Hill. (Silver Banksian Medal.)

HARDY PERENNIAL FLOWERS.

There were numerous exhibits of hardy flowers. Mr. FRANK BRAZIER, Caterham, who has previously shown rare skill in grouping hardy flowers, surpassed his former efforts. The chief subjects in his group were Phloxes, Pentstemons, early-flowering Chrysanthemums and Michaelmas Daisies arranged in bamboo stands and associated with such species of Vitis

as V. Henryana, sprays of the Spanish Broom and other appropriate foliage. (Silver-gilt Banksian Medal.)

Mr. JAMES BOX, Lindfield Sussex, also brought a very fine display, his exhibit occupying a full table length. He showed Phloxes in great variety, notably Lindfield Beauty, with flowers of a pretty pink shade; Aster Beauty of Colwall, Kniphofias of sorts; Gladiolus "America," of which there was a central group of 150 spikes; G. princeps; Liliums in variety, and many other seasonable flowers. (Silver Flora Medal.)

Messrs. R. H. BATH, LTD., Wisbech, had a large and representative display of early-flowering Chrysanthemums.

The GUILDFORD HARDY PLANT NURSERY staged a great variety of hardy flowers, including Clematis Davidiana, Kniphofia Macowanii, Senecio tangutica, Phloxes, and Michaelmas Daisies.

Messrs. WM. WELLS & Co., LTD., Merstham, had a capital group of early-flowering Chrysanthemums, arranging the several varieties in bold masses. Polly (gold and bronze), Horace Martin (rich yellow), Roi des Blancs, and Mychett (scarlet), were among the best varieties in a most effective collection. (Bronze Flora Medal.)

Messrs. BACKHOUSE & SON, York, displayed a delightful lot of Colchicum speciosum album, some of the corns bearing as many as six of the handsome, pure-white flowers. This is one of the most notable of early autumn-flowering plants, and being now available at a cheap rate, should be grown by all. Other Colchicums in variety and a set of the autumn-flowering Crocuses were likewise remarked. (Bronze Flora Medal.)

Mr. MAURICE PRICHARD, Christchurch, Hants., displayed a fine collection of hardy subjects, including Kniphofia Triumph, a late flower of golden-bronze colour; K. Rufa, a beautiful variety of the miniature set; fine, well-flowered inflorescences of Crinum Powellii and C. P. alba. Cyclamen hederifolium album, spreading out a couple of score of blossoms to a foot wide from a solitary corm; Scabiosa caucasica, exceptionally good in colour and in a fine mass, and, not least, the beautiful Hypericum egyptiacum, a miniature glaucous-leaved bush laden with golden buds and blossoms. (Silver Flora Medal.)

Messrs. BARR & SONS, King Street, Covent Garden, arranged an excellent lot of flowers, such as Gladiolus in variety, Phloxes, Colchicums, autumn Crocuses, including C. zonatus, C. speciosus, and the rich, golden-flowered C. Scharojani. (Bronze Flora Medal.)

Mr. H. F. ROBSON, Ham, Surrey, displayed many seasonable hardy flowers in company with early Chrysanthemums.

Mr. AMOS PERRY, Enfield, exhibited Larkspurs, Artemesia lactiflora, a fine mass; Montbretias, Colchicums, Sarracenia purpurea, S. psittacina, Alstroemeria psittacina, Sternbergias, and Asclepias tuberosa. (Bronze Flora Medal.)

Messrs. H. J. JONES, LTD., Lewisham, S.E., displayed a capital assortment of Michaelmas Daisies: S. T. Wright, Ryecroft Pink, Beauty of Colwall, C. Anderson, extra good blue colour; Finchley White and Ryecroft Purple being good and distinct varieties. (Silver Banksian Medal.)

Mr. G. REUTHE, Keston, Kent, included in an interesting group Tropæolum tuberosum, with rich scarlet and gold flowers; Crinums, Stokesia cyanea, Phygellus capensis, Escallonia oregonensis (pink), Indigofera doussa (purplish), Eucryphia pinnatifida, with white flowers; Abelia floribunda, and species and varieties of Campanula. (Bronze Flora Medal.)

Messrs. JOHN FORBES, LTD., Hawick, brought large collections of Phloxes and hybrid Pentstemons, the latter including Crimson Gem, a splendid variety. (Silver Banksian Medal.)

Messrs. DOBBIE & Co., Edinburgh, had a superb exhibit of Marigolds, which embraced the bold and massive African sorts Prince of Orange and Lemon Queen, the pretty dwarf-growing, single-flowered Legion of Honour, and Dobbie's striped form of the tall French or exhibition variety. An excellent group of exhibition Quilled Asters, with several distinct varieties of Cosmos, were also noted in this group. (Silver Banksian Medal.)

Primula × Briscoei (P. Bulleyana × P. japonica), shown by Messrs. JAS. VEITCH & SONS, LTD., Chelsea, is interesting from the fact that it is the first hybrid resulting from P. Bulleyana. The flowers of the hybrid are not unlike those of P. × Unique. The habit is that of a pale-leaved P. japonica, with more crimsoned

mid-rib, the inflorescence inheriting, to some extent, the powdery character of the other parent.

AWARDS OF MERIT.

Gladiolus Rathline.—The flowers are of large size and of a deep cream tone, the lower central petal being yellow, and flushed with crimson at the base. The spike is handsome and well formed. From Mr. BULL, Ramsgate.

Chrysanthemum Hollicot White.—A handsome early-flowering variety of great purity, the flower-heads being borne on stiff, erect stems.

Chrysanthemum Hollicot Yellow.—The colour of this variety is a clear buttercup yellow, the slightly-drooping florets presenting a well-finished surface. Both Chrysanthemums were exhibited by Mr. W. ROOTS, Cranford, Middlesex.

Dahlia Cardinal (single).—A shapely flower of rich reddish-scarlet colour.

Dahlia Mrs. Jognson Hicks (single).—The flower is orange-coloured and buff, the base of the florets being of rich crimson.

Dahlia Mrs. Landale.—A garden Cactus variety with rosy-pink florets on a yellow ground.

Dahlia Hon. Mrs. Greville.—Also a garden Cactus variety, the colour being orange yellow, suffused with salmon; a very handsome variety. These were exhibited by Messrs. J. CHEAL & SONS, Crawley.

Dahlia Princess Juliana (Pæony-flowered).—A pure white variety. From Messrs. WHITELEGG & PAGE, Chislehurst.

Dahlia Sweet Briar.—A garden Cactus variety of fine rose colour.

Dahlia H. L. Brousson (Cactus).—The colour of this variety is delicate salmon on a pale yellow ground. A fine variety of the best exhibition type. These two were shown by Messrs. STREDWICK & SON, St. Leonards.

Dahlia Ouida (single).—A shapely flower of salmon rose shade and crimson centre.

Dahlia Loveliness (single).—This variety is rose-coloured, with crimson centre. These two were shown by Mr. M. V. SEALE, Sevenoaks.

Dahlias Minerva and Loveliness.—These belong to the Cactus-flowered section, and they were exhibited by Mr. CHARLES TURNER, Slough.

The National Dahlia Society made awards at the same meeting, granting First-class Certificates to Hon. Mrs. Greville, Ouida and Loveliness, described above; also to Bridal Crown, George Ireland, Clarissa, Mrs. Usmar, Rosette, Butterfly and The Earl.

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the Chair); and Messrs. Jas. O'Brien (hon. sec.), Harry J. Veitch, Gurney Wilson, J. Wilson Potter, H. Ballantine, W. H. White, H. G. Alexander, W. H. Hatcher, W. P. Bound, Walter Cobb, J. Cypher, Chas. H. Curtis, W. Thompson, F. J. Hanbury, Henry Little, Clive Cookson, R. G. Thwaites, W. Bolton, and de B. Crawshaw.

Messrs. SANDER & SONS, St. Albans, were awarded a Silver-gilt Flora Medal for a fine group, the principal feature in which was a batch of *Vanda coerulea*, all the plants being profusely-flowered. With these were the rare natural hybrid *V. amœna*, and many choice and interesting species, one of the most extraordinary plants being the provisionally-named *Coryanthes Sanderi*, a very large flower allied to *C. macrantha*. The fleshy, lower part is yellow, spotted inside with purple, the neck-like middle showing several raised rings, and the apricot-coloured hood-like upper part curved downward. There was also a pale yellow form of *C. punctata*; a singular little *Zygopetalum*; several plants of the new and pretty *Dendrobium Sanderi*, *Cattleya Adula* "Sunray" especially fine; *Lælio-Cattleya Walteri* Gott (L.-C. *Blethleyensis* × *C. bicolor*), a very pretty bronze-orange flower with ruby-magenta lip; *Cælogyne pandurata* and *Notylia sagittifera*.

H. S. GOODSON, Esq., Fairlawn, Putney (gr. Mr. G. E. Day), was awarded a Silver Flora Medal for an attractive group, the central plant in which was the noble *Cattleya Iris King Edward VII.*, which received a First-class Certificate. The group also included several fine varieties of *Lælio-Cattleya Blethleyensis*, L.-C. *eximia*, L.-C. *Pacavia*, fine varieties of *Cattleya Adula*, *Sophro-Cattleya Chamberlainiana*, and other crosses of *Sophrontitis grandiflora*; several

good specimens of *Cattleya* Mrs. J. W. Whiteley, *Miltonia Phalenopsis*, *Odontoglossum ardentissimum* and other *Odontoglossums*.

Messrs. CHARLESWORTH & Co., Haywards Heath, received a Silver Flora Medal for a group in which showy-flowered plants of varieties of *Cattleya* Iris, *C. Adula*, *C. Venus*, the noble *Laelio-Cattleya* St. Gothard, and *L.-C. callistoglossa* were specially fine. *Brasso-Cattleya* Moneta (*C. Gaskelliana* alba \times *B.-C. Mrs. C. Maron*), by its fine shape and substance, well exemplified the advantages of secondary crossing. Among pretty species noted were *Cirrhæa viridipurpurea*, *Notylia sagittifera*, the rose-tinted *Rodriguezia secunda*, *Acineta chrysantha*, the rare *Chondrorhyncha fimbriata*, and a grand variety of *Oncidium Kramerii*.

Messrs. STUART LOW & Co., Bush Hill Park, Enfield, were awarded a Silver Flora Medal for a varied and interesting group of plants which included good forms of *Cattleya* Iris, *C. Adula*, and other showy hybrids, the long sprays of yellow *Oncidium Marshallianum* being also effectively displayed. With these were a good dark violet-flowered *Bollea Lalindei*, *Ionopsis paniculata*, *Cœlogyne Micholitzii* and other

Warszewiczii respectively; the parentage could be distinctly traced in the beautiful flowers of the progeny. Some *Brasso-Cattleyas* and *Sophro-Cattleyas* were also shown.

Messrs. MANSELL & HATCHER, Rawdon, Yorks., staged a group for which a Silver Flora Medal was awarded. It contained some fine specimens of *Laelio-Cattleyas* and hybrid *Cattleyas*. *Cattleya* Iris varieties, forms of *C. Adula*, and good *Laelio-Cattleyas* were, as in most of the other groups, the most prominent. Among *Odontoglossums*, *O. crispum*-*Harryanum*, *O. ardentissimum*, and others were remarked, such as *Cypripediums* Rossetti, the dark-coloured *C. St. Alban*, *C. Chas. Richman*, and others noted were *Brasso-Cattleya* Digbyano Mendelii, *B.-C. Thorntonii*, the pretty *Dendrobium Sanderæ*, *D. bigibbum*, and *Odontoglossum grande*.

Mr. E. V. Low, Vale Bridge, Haywards Heath, was given a Silver Banksian Medal for a good group of fine varieties of *Cattleya* Iris, *C. Adula*, *C. Armstrongiæ*, *C. atalanta*, and others. In the centre of the exhibit was a fine specimen of *Epidendrum floribundum* and another of *Bulbophyllum Lobbii* Colussus, with four flowers, and besides these there were two finely-flowered plants

fig. 9 in *Gard. Chron.*, July 9, 1898, p. 31) with cream-coloured flowers spotted with purple and having a differently-shaped lip to the other species; a pretty little *Dendrobium* resembling *D. secundum*, the brightly-coloured *Sophro-Laelio-Cattleya pumeximia* (*L. pumila* \times *S.-L. eximia*), and others.

Messrs. STANLEY & Co., Southgate, staged a small group which included varieties of *Cattleya* iridescens (*Eldorado* \times *bicolor*); these vary considerably, but the flowers are consistent in some shades having yellow on the isthmus of the lip. This firm also showed *Cypripedium* A. de Laireisse with eight flowers, and a plant of *Cattleya Gaskelliana* alba.

Messrs. WILLIAM BULL & SONS, Chelsea, showed a fine specimen of *Odontioda Charlesworthii*, *Cattleya* Iris and *C. Maronii* aurea.

Mr. W. MILLER, Clarkson Nurseries, Wisbech, showed a selection of *Laelio-Cattleyas*, *Cattleyas*, *Cypripediums*, &c.

W. P. BURKINSHAW, Esq., Hessle, Hull (gr. Mr. Barker), exhibited *Laelio-Cattleya Ivernia* var. Muriel Wilson, a large and beautiful flower with broad, rosy-lilac sepals and petals, the lip being deep claret-crimson; *Cattleya* Iris aurifera, with golden sepals and petals; and a good *Brasso-Cattleya* Pluto (*B. Digbyana* \times *C. granulosa* Schofieldiana) were also noticed.

Mrs. NORMAN COOKSON, Oakwood, Wylam-on-Tyne (gr. Mr. H. J. Chapman), sent *Cypripedium* Angela (*niveum* \times *Fairrieianum*), a charming little flower; *C. Sybil superbum* (*Francisiæ* \times *Fairrieianum*), an elegant flower with a rose-coloured dorsal sepal margined with white, and with dark lines, the petals also being tinged with rose and gracefully decurved; and *C. Chapmaniæ* (*Calypso* \times *Fairrieianum*), with yellowish-green ground colour, the upper half of the dorsal sepal being white, and the base bearing purple-feathered lines.

Messrs. JAS. VEITCH & SONS, Royal Exotic Nurseries, King's Road, Chelsea, showed *Neobenthamia gracilis* with many terminal heads of its pretty white flowers purple-spotted on the label lums and column.

AWARDS.

FIRST-CLASS CERTIFICATES.

Cattleya Adula King Edward VII. (*Dowiana aurea* \times *bicolor*), from H. S. GOODSON, Esq. (gr. Mr. G. E. Day).—This was pronounced to be the finest *C. Iris* yet shown, the flowers being among the largest and of perfect shape. The sepals and petals are yellowish-sap-green, with an obscure pale rose veining, the broad front of the lip glowing with amethyst-purple.

Laelio-Cattleya Berthe Fournier magnifica (*L.-C. elegans* \times *C. Dowiana aurea*) (see fig. 87), from Lieut.-Col. Sir GEORGE L. HOLFORD, Westonbirt (gr. Mr. H. G. Alexander).—The Westonbirt type of this handsome flower is well known, and many fine varieties of it have been shown, but in most of them the form of the lip has been nearest to *C. aurea*. This variety, *magnifica*, is quite different, the lip being displayed as in *C. Iris*, but much broader. The sepals and petals are reddish-rose, with a golden-yellow glow, and the lip bright amethyst-purple. The spike bore six fine flowers.

AWARDS OF MERIT.

Cypripedium Angela (*niveum* \times *Fairrieianum*), from Mrs. NORMAN COOKSON (gr. Mr. H. J. Chapman).—A charming white flower of good shape, the upper sepal, lip, and petals bearing dotted lines and markings of purple. The centre of the staminode is dark green.

Odontioda Cecilia (*C. Nozliana* \times *O. Wiganianum*), from R. G. THWAITES, Esq. (gr. Mr. J. M. Black).—A new and, when perfected, a fine break, the flowers being of good size and shape. The ground is cream-white, densely spotted with Indian red, the lip bearing distinct blotches of the same colour each side of the crest.

Cattleya Adula Thwaitesii variety, from R. G. THWAITES, Esq.—A grand flower, with rosy-lilac tinted flowers and a very broad crimson-purple lip, the centre being the darker, and the base having orange-coloured markings.

BOTANICAL CERTIFICATE.

Bulbophyllum polyblepharis, from Sir TREVOR LAWRENCE, Bart. K.C.V.O.—A remarkable little species, with leafy growth, as in some of the small *Pleurothallis*, the dark-purple flowers being borne singly on slender scapes, 2 inches high.



[Photograph by J. Gregory.]

FIG. 87.—*LAELIO-CATTELEYA BERTHE FOURNIER MAGNIFICA*.

(Awarded a F.C.C. at the Royal Horticultural Society's meeting on the 13th inst.)

*Cœlogyne*s; *Bulbophyllum* Lobbii, *B. Godseffianum* and *B. Dearei*; *Epidendrum* *Bras-ovole*, *Cirrhopetalum* *Mastersianum*, *C. pulchellum*, a fine plant of *Zygopetalum maxillare* Gautieri, and another of *Cyrtopodium punctatum*.

R. G. THWAITES, Esq., Chessington, Christchurch Road, Streatham (gr. Mr. J. M. Black), was awarded a Silver Flora Medal for an interesting group of hybrids raised at Chessington, the *Cochlidia* crosses being specially noteworthy. One of these, *Odontioda Cecilia*, a new break, secured an Award of Merit, as did the handsome *Cattleya Adula* Thwaitesii variety. *Odontioda Wilsonii* (*C. vulcanica* \times *O. Pescatorei*) is a neat flower with whitish ground colour, the inner parts of the segments being coloured a rosy-lilac and the lip showing *O. Pescatorei* markedly, as it invariably does where that species is used as a parent. *Cochlidia* Thwaitesii is a standard variety now that it is established, its varied tints of rose and purple being very attractive. There were three plants obtained from crosses with *Cattleya superba*, the other parents being *Cattleya Dowiana aurea*, *C. Hardyana*, and *C.*

of *Cypripedium* Jas. H. Veitch, the one with four and the other with three flower-spikes.

Lieut.-Col. Sir GEORGE L. HOLFORD, K.C.V.O. (gr. Mr. H. G. Alexander), sent the beautiful *Laelio-Cattleya Berthe Fournier magnifica* (see Awards), and *L.-C. Golden Fleece*, the latter a charming yellow-flowered variety.

Sir JEREMIAH COLMAN, Bart., V.M.H., Gatton Park (gr. Mr. Collier), staged a group of much botanical interest. Prominent was a fine plant of the singular *Bulbophyllum lemniscatoide*s, with three drooping plume-like racemes; also *Eria stellata*, with a tall spike of white flowers; the fine white *Dendrobium Phalenopsis* "Gatton Park variety," which has violet marking on the lip. A curious hybrid *Spathoglottis*, between *S. kewensis* and *S. Colmanii*, with white flowers and a lilac tint on the column and lip; *Cattleya Gaskelliana cœrulescens*, and a hybrid between *Odontoglossum Edwardii* and *O. luteo-purpureum* were also shown by this exhibitor.

Sir TREVOR LAWRENCE, Bart., K.C.V.O., Burford (gr. Mr. W. H. White), showed the very distinct and pretty *Stanhopea Rodigasiana* (see

The lanceolate sepals are extended perpendicularly. The projected lip is densely hairy, and the petals are small.

CULTURAL COMMENDATION

To Mr. W. H. White (Orchid grower to Sir Trevor Lawrence, K.C.V.O.) for a splendid plant of *Dendrobium Hookerianum* (chrysotis); the long, slender stems bore a dozen sprays of large, yellow-fringed-lipped flowers, with dark centres.

Fruit and Vegetable Committee.

Present: G. Bunyard, Esq. (in the Chair); and Messrs. J. Cheal, C. G. A. Nix, W. Jefferies, V. Bates, J. Davis, G. Reynolds, O. Thomas, J. Harrison, H. S. Rivers, W. Poupard, C. Foster, A. Dean, G. Hobday, J. Vert, J. Willard, G. Wythes, W. Pope, and J. Lyne.

Messrs. T. RIVERS & SONS, Sawbridgeworth, staged a singularly beautiful collection of Apples and Plums gathered from pot trees. Peasgood's Nonesuch Apples were coloured superbly, and hardly less so were those of Cox's Orange Pippin and Ribston Pippin. The coloured Plums were Reine Claude d'Althann, Late Prolific, Grand Duke, Emperor, Admiral, Kirke's, President, Late Transparent, and Monarch. White and yellow Plums included Early Transparent, De-caine, Reine Claude, Transparent Gage, Golden Transparent, and Jefferson. (Silver-gilt Knightian Medal.)

C. J. CAYLEY, Esq., Tunbridge Wells (gr. Mr. Poulton), showed 15 bunches of excellent Grapes, including the varieties Madresfield Court, Black Hamburg, Frankenthal, Gros Maroc, and Foster's Seedling. (Silver Knightian Medal.)

Messrs. W. PAUL & SON, Waltham Cross, staged a number of well-grown Pear trees in pots, all heavily fruited. Among them were Pitmaston Duchess, Beurré Diel, Beurré Clairgeau, Beurré d'Anjou, Marie Louise, Bergamotte Esperen, Beurré Alexander Lucas, Doyenné du Comice, and Margaret Marrillat. (Silver Knightian Medal.)

Messrs. JAS. VEITCH & SONS, LTD., Chelsea, sent superb fruits of their new cooking Apple, the Rev. W. Wilks, and of the dessert variety, St. Everard.

A Cultural Commendation was made to a dish of Pear Doyenné Boussoch, from Mr. W. BANSISTER, the fruits being very handsome, but the flesh rather dry.

Mr. G. W. MILLER, Wisbech, showed a large number of Apples, including Red Victoria. (Silver Banksian Medal.)

Messrs. G. BUNYARD & Co., Maidstone, had a collection of 75 fruit trees in pots, the display occupying 70 feet length of staging; also many dishes and baskets of gathered fruits. Of Peaches, as trees, were Sea Eagle, Duchess of York, Princess of Wales, Albatross, and Thomas Rivers. Grapes were represented by Muscat of Alexandria and Black Hamburg. Plums included numerous trees of Golden Drop; Pears Emile d'Heyst, Princess, St. Luke, Marie Benoist, Fondante de Thirriott, and Beurré Diel. Of Apples, Pomona, Wealthy, Peasgood's Nonesuch, Gascoyne's Scarlet, Allington Pippin, Mother, Charles Ross, and Cox's Orange Pippin were splendidly shown. There were also numerous small fig trees and gathered fruits. (Gold Medal.)

Messrs. CLIBRAN & SON, Altrincham, set up a remarkable collection of Celery, comprising 24 named varieties. The samples were exceedingly clean, well blanched, and evidently of solid texture. A selection of the white sorts are Market White, Clibran's White, Empress, Jersey Lily, and Wright's Giant. Pink: Favourite, Clibran's Pink, Grove Pink, and Aldenham Pink. Reds: Standard Bearer, Williams' Matchless, and Leicester Red. (Silver Knightian Medal.) This firm also received a Cultural Commendation for six pot plants of their Exhibition Parsley.

AWARDS.

FIRST-CLASS CERTIFICATES.

Apple Rev. W. Wilks.—Messrs. JAS. VEITCH & SONS were awarded a First-class Certificate for this yellow-skinned cooking Apple, which received an Award of Merit several years since. This beautiful Apple is the result of crossing Peasgood's Nonesuch with Ribston Pippin. It is singularly precocious as a bearer, fruiting on both maiden and on two-year old trees.

Apple Red Victoria.—An Apple of wonderful colour, which penetrates into the flesh. It is a great cropper; and fruits have been shown on many occasions.

AWARDS OF MERIT.

The following two varieties of Potatoes were, after cooking and trial at Wisley, granted Awards of Merit:—Prima Donna, from Mr. A. CHAMBERS, Tunbridge Wells, and Dalmeny Early, from Messrs. BARR & SONS. An Award of Merit was also given to a tall, late, long podded Pea grown at Wisley, where it was received from Messrs. JAS. CARTER & Co., Holborn, described as seedling 223.

ROYAL HORTICULTURAL SOCIETY OF IRELAND.

AUGUST 23.—The autumn show organised by the Royal Horticultural Society of Ireland was held on this date in Lord Iveagh's grounds, St. Stephen's Green, and was a great success. In all departments, including flowers, fruit and vegetables, the number of entries totalled 698, a very considerable advance upon the number for the autumn show of last year. The floral display was a particularly beautiful one, and one of the most interesting held under the auspices of the society for many years past. There was a splendid display in the Sweet Pea and Rose classes. In the former classes, one of the special features of the show was the exhibit sent in by Mr. EDWARD COWDY, Queenhall, Loughgall, which was awarded the challenge cup presented by Sir John G. Nutting, Bart. In the champion class for Sweet Peas, Mr. Cowdy's exhibit was awarded the society's Gold Medal. In the stove and greenhouse plant sections, the exhibits were of an extremely gratifying character judged from the standpoint of careful cultivation and excellence of results. In this section, the exhibits shown by Mr. F. A. MILLAR and Sir ERNEST COCHRANE were particularly deserving of notice, and won high commendation. In the Carnation class, the Watson Challenge Cup was awarded to Mrs. HELE HUTHCHINSON. Roses were very largely shown by private exhibitors and members of the trade, and the display in that department of the show was up to a very high standard. In the traders' sections, the displays of Roses made by Mr. HUGH DICKSON, Belfast, and Messrs. ALEXANDER DICKSON & SONS, LTD., Dublin, were particularly good. Messrs. W. DRUMMOND & SONS were awarded a Gold Medal for a very large, varied, and tastefully-arranged exhibit of hardy flowers, Shrubs, and Alpine plants, comprising some 300 species and varieties, some of which were quite new. A Gold Medal was also awarded to Mr. S. A. JONES, Forest Lodge, Gowran, County Kilkenny, for a large and varied collection of Gladioli. Messrs. CHARLES RAMSAY & SONS, Royal Nurseries, Ballsbridge, were awarded a Silver Medal for a collection of flowers and plants. Messrs. WATSON & SONS, Clontarf Nurseries were awarded a Silver Medal for a collection of border Carnations.

CARLISLE HORTICULTURAL.

AUGUST 31, SEPTEMBER 1.—The third annual show was held in the large Market Halls on these dates, and was a great success. There was an increased number of entries in all the classes, especially in those reserved for amateurs. Hardy flowers were scarcely so fine as usual, owing to the unfavourable weather, but fruit was of excellent quality, especially Apples shown by Mr. JOHN MILLICAN, Scotby Lane, Carlisle. The county authorities (Mr. W. B. LITTLE, horticultural instructor) staged an exhibit of Apples and bottled fruits. There was keen competition in the vegetable classes, the competitors including Mr. EDWIN BECKETT, of Aldenham House Gardens, Hertfordshire.

Mr. HUGH DICKSON, Belfast, won the 1st prize for 36 blooms of Roses, distinct, and Mr. THOMAS PRIDE, Schoolhouse, Canonby, had the best exhibit of 12 Rose blooms. Sweet Peas were shown numerously; Mr. JOHN FLETCHER, Auchin Heath, Lanarkshire, had the winning stand in Mr. Robert Bolton's classes for 12 bunches, showing popular varieties. Messrs. Robert Sydenham, Ltd., Birmingham, also offered prizes for Sweet Peas, including a challenge cup. The

trophy was secured by Mr. GRAHAM, Morville, Carlisle. Mr. JOHN FLETCHER showed the best nine vases of Sweet Peas, Mr. EDWARD KEITH following.

Mr. GEORGE BOWNESS, Busby, proved the 1st prize winner in the classes for 12 vases of early-flowering Chrysanthemums and 24 varieties of Cactus-flowered Dahlias. Some good groups of hardy flowers were staged; for 12 kinds, Mr. J. HAY, Carlisle, won the 1st prize easily; 2nd, Mr. JOHN ROBERTSON, Carlisle.

In the fruit classes some excellent Grapes were seen. For two bunches of a black variety, Mr. WM. SCOTT, Eden Hall Gardens, Penrith, was the most successful exhibitor with Madresfield Court; 2nd, Mr. EDWARD KEITH with Black Alicante; Mr. H. SMITH, Keswick, showed the finest bunch of Black Hamburg, and Mr. T. FINSTER had the best white Grapes.

In the vegetable classes some fine produce was seen. The Hon. VICARY GIBBS (gt. Mr. E. Beckett) proved irresistible in the class for a collection of 12 kinds.

There were numerous non-competitive exhibits, the more important being staged by Messrs. SUTTON & SONS, Reading (Large Gold Medal); Messrs. GEO. FAIRBAIN & SONS, Botcherby Nurseries (Large Gold Medal); Messrs. JOHN FORBES, LTD., Hawick (Gold Medal); Mr. JOHN MILLICAN, Carlisle (Gold Medal); Messrs. LITTLE & BALLANTYNE (Silver gilt Medal); Messrs. JOHN STORMONTH & SONS, Kirkbridge (Silver Medal); Messrs. CLARK BROS., Carlisle (Silver Medal); Messrs. HERD BROS., Penrith (Silver Medal); Messrs. ALEC McLAUGHLIN, Stranraer (Silver Medal); and Sir BENJAMIN SCOTT (Silver Medal).

ORSETT AND DISTRICT AGRICULTURAL AND HORTICULTURAL.

SEPTEMBER 8.—This society held its sixteenth annual show as usual in the park adjoining Orsett Hall, by the permission of the President, Major F. H. D. C. Whitmore. The show was, on the whole, an improvement upon those of previous years; the entries were more numerous, and the quality of the exhibits, in the majority of classes, was excellent. Hardy fruit is always a strong feature of the Orsett-Show, and this year remarkably fine specimens of Apples were staged, the fruits being extra large, clean, and in some cases, coloured beautifully. In the class for a half-sieve of Apples, packed ready for market, Mr. T. RIDGEWELL, Orsett, was placed 1st, with fine examples of Worcester Pearmain; Mr. T. M. READ ANDREWS, Bulpham, was an excellent 2nd. For 12 fruits of Worcester Pearmain Mr. W. SUTTON, Orsett, was awarded the 1st prize, Mr. T. RIDGEWELL being 2nd, and these exhibitors won most of the prizes in other classes for Apples. In the class for four kinds of fruits Mr. CONINGSBY, Stanford-le-Hope, was awarded the 1st prize, staging good Plums, Morello Cherries, Figs, and Pears; Mr. W. SUTTON and Mr. T. RIDGEWELL being 2nd and 3rd respectively. Mr. NEIGHBOUR had the best four dishes of Pears. For four dishes of Plums Mr. W. SUTTON was placed 1st, staging fine fruits of Monarch, Diamond, Jefferson's and Victoria. Mr. C. CONINGSBY had the best two bunches of Grapes, staging Black Hamburg; 2nd, Mr. C. BUTCHER, Grays, with Black Alicante. Mr. T. SUTTON had the best two dishes of Pears; Mr. C. HOWARD, Orsett, the best two dishes of Plums, and Mr. F. W. Fox the best single dish of Plums. Cut flowers, Dahlias, Asters, Roses and other hardy flowers were shown well, also button-hole sprays, table decorations, and vegetables.

NATIONAL CHRYSANTHEMUM.

TRIAL OF EARLY CHRYSANTHEMUMS.

SEPTEMBER 10.—On this date the members of the Floral Committee visited Messrs. W. Wells & Co.'s nurseries at Merstham, to inspect a trial of early-flowering Chrysanthemums. The following varieties were selected for distinction, and marked with three crosses:—Alexandra, Brazier's Beauty, Chestnut, Dorothy, Esther, Eva Graham, Dr. Ingram, Goldlace, Hilda's Favourite, Lily Ovenden, Little Nell, Marie Corelli, Mary, Masterpiece, Nellie King, Parapan, Prolific, Ruby, and Sunset.

NATIONAL DAHLIA.

SEPTEMBER 7, 8.—Since the amalgamation of this Society with the London Dahlia Union two exhibitions have been held annually. The first one, which is usually the more important event, for the present season, took place, as in former years, at the Crystal Palace on these dates. The weather was fine, and the attendance on the opening day was greater than usual, but on Friday the number of visitors was small.

NURSERYMENS' CLASSES.

The Show varieties still take precedence in the schedule, and the largest class in this section was arranged for 48 blooms, distinct. There were three entries, the 1st prize being won by Mr. JOHN WALKER, Thame, whose best blooms were Chieftain (purplish-lilac), Blush Gem, T. W. Girdlestone (a grand variety of richest purple colour), Purple Prince, Daniel Cornish (reddish), Wm. Rawlings (crimson and purple), Mrs. Slack, Tom Jones, Mr. Glasscock, Southern Queen, John Hickling (a grand yellow variety), A. Rawlings (very choice), Standard, John Walker (one of the best of white show Dahlias), Mariner, Diadem, and Mrs. Langtry (generally good in this show). 2nd, Mr. S. MORTIMER, Rowledge, Farnham, Surrey, with large, but hardly so refined, blooms as in the 1st prize exhibit. Some of the best were Blush Gem, Glowworm (orange red), Pleasance, Chieftain, Tom Jones (creamy with a suffusion of pink), David Johnson, and Florence Tranter (a variety with pale-coloured florets edged with purple). 3rd, Mr. Wm. TRESEDER, Cardiff.

In the smaller class for 24 blooms distinct, there were two exhibitors, Mr. M. V. SEALE, Sevenoaks, and Messrs. KEYNES, WILLIAMS & Co., Salisbury, 1st and 2nd prizes being awarded in this order. The blooms in both cases were only mediocre in quality. Mr. SEALE's best examples were Daniel Cornish, Duchess of York, Gracchus, Chieftain, Eclipse, and R. T. Rawlings; whilst a selection of Messrs. KEYNES, WILLIAMS & Co.'s varieties included Mr. Glasscock, R. T. Rawlings, Wm. Rawlings, John Walker, Keynes Al, Miss Ormonde, and Mrs. Langtry.

Fancy Dahlias.—There were two classes exclusively for fancy Dahlias, and one for show and fancy Dahlias intermixed. The largest class for fancies was arranged for 18 blooms distinct, and it attracted three exhibitors. Mr. JOHN WALKER secured the 1st prize with a good display. Outstanding varieties in his exhibit were T. W. Girdlestone, Rev. J. B. Camm, Wm. Shaldon, Mrs. Saunders, M. Campbell, Comedian, and John Cocker. 2nd, Mr. W. TRESEDER, with much smaller blooms, although Walter Spriggs, Hugh Austin, and Emin Pacha were very good. 3rd, Mr. S. MORTIMER.

For 12 blooms distinct Messrs. KEYNES, WILLIAMS & Co. led with a very creditable stand, having such sorts as Rev. J. B. Camm, Dandy, Mrs. Saunders, Henry Clark, Tom Perryman, Gold Crest, and Matthew Campbell. Mr. SEALE followed closely, having specially good flowers of Claret Cup, Nansen, and Mrs. Saunders.

The better of two exhibits of show and fancy Dahlias intermixed was exhibited by Messrs. J. CHEAL & Sons, Crawley, the other exhibitor being Messrs. Wm. PEMBERTON & Son, Bloxwich, Walsall.

Cactus Dahlias.—The most important class for Cactus varieties is that in which a Silver Challenge Cup, valued 15 guineas, is offered for the 1st prize. Messrs. JAMES STREDWICK & Sons, Silverhill, St. Leonards, again proved invincible, making the 8th consecutive win. It is usual for this firm to show in this class their principal novelties for the year, and on this occasion they exhibited 11 new varieties in the display. The finest of these is named after Dr. Roy Appleton, the florets being pink with a yellow base and very pointed, giving a star-like appearance to the flower, the other new ones were H. L. Brouson (with thread-like florets, coloured dark rose passing to white in the centre), Mrs. Douglas Flemming, Golden Eagle (golden-yellow passing to bronze at the tips), Tokyo (salmon and yellow), Arrow (bronze), Irresistible (a very heavy bloom, with incurved florets suffused with rose on a yellow ground), Snowflake (white), Viscount (brick red), Albatross (white), and Crystal (soft rose tipped with white). The other blooms included one of H. H. Thomas, which was awarded the Silver Medal offered for the best Cactus-flowered Dahlia in the Nurserymen's classes.

2nd, Messrs. J. BURRELL & Co., who had also a very choice exhibit, a selection of their varieties being Oswald, Monarch, Conquest, Ivernia, Satisfaction, Stormer, and Glory of Wilts. 3rd, Messrs. J. CHEAL & Sons.

Mr. JOHN WALKER led in the class for 12 varieties shown in bunches of six blooms, followed by Mr. SEALE, with Messrs. KEYNES, WILLIAMS & Co. 3rd, these being the only exhibitors.

There was a keen competition for 48 blooms distinct shown on boards, and Messrs. STREDWICK & Sons won the premier prize with a grand stand of blooms, the 2nd prize exhibit, shown by Messrs. JAMES BURRELL & Co., was also remarkable for its high quality, and even the 3rd group prize was effective.

Mr. Wm. TRESEDER was placed 1st for 24 blooms distinct; 2nd, Mr. JOHN WALKER.

There were two exhibits in a class for 12 varieties of garden Cactus Dahlias, 6 blooms of each variety arranged in a vase with hardy foliage in grasses, Messrs. J. CHEAL & Sons and Mr. M. B. SEALE were the only exhibitors; the 1st and 2nd prizes being awarded in the order of their names. Messrs. CHEAL showed such sorts as Snowdon, Hon. Mrs. Granville, Ivy Shoebridge, and Mrs. C. Foster, arranged with Eulalia zebrina, Berberis, Maples, and Asparagus.

Pompon Dahlias.—These were shown remarkably well, Mr. CHARLES TURNER winning in the largest class, which was for 24 varieties in bunches of 10 blooms each. He showed Annie Doncaster, Darkest of All, Portia, Queen of Whites, Guinevere, Wilfred, Mary, Phyllis, Sylvia, Zerlina, Ideal, Cyril, Little Mary, Ganymede, Bacchus, and others. 2nd, Messrs. J. CHEAL & Sons with Annie Doncaster, Marietta, Bacchus, Elsa, Nerissa, Ganymede, Ideal, Girlie, and Phyllis. 3rd, Mr. M. V. SEALE.

Messrs. J. BURRELL & Co. excelled with 12 varieties, followed by Mr. JOHN WALKER.

Single Dahlias were rather less refined than usual. There were three exhibitors in the class for 24 varieties. Messrs. J. CHEAL & Sons being the most successful with good blooms of Miss Roberts, Elaine (white), Columbine, Victoria, Leslie Seale, Alice Castle, Kitty, and Miss Morland. 2nd, Mr. M. V. SEALE.

Paeony-flowered Dahlias, shown in vases, appeared ungainly, Geisha (reddish on orange), Bella Donna (blush) and Bayard (red and yellow), shown in Mr. C. TURNER's 1st prize group, appealed to us most.

AMATEUR CLASSES.

There was rather more competition amongst amateur exhibitors, there being in one class no fewer than 10 groups. For 24 blooms of Show and Fancy Dahlias, distinct, Mr. H. COOPER, the Hamlet, Chippenham, was placed 1st for shapely, well-coloured blooms of R. J. Rawlings, Rev. Camm, H. Rawlings, Mr. J. Downey, Mabel, Chieftain, Mr. Peter MacFensey, H. Keith, J. Walker, Mrs. Saunders, Mrs. Langtry, Norma, and others. 2nd, Mr. G. DEASLEY, Nag's Head Hill, St. George's, Bristol, with a very good lot, including Tom Jones, Chieftain, T. Astens, D. Johnson, Mrs. Saunders, R. T. Rawlings, J. Walker, Pleasance, Dandy, and A. Rawlings.

Mr. COOPER was also 1st for 12 Show Dahlias, distinct, having six competitors, his closest rival being Mr. A. ROBBINS, 3, Prospect Place, Keynsham. In the smaller class for six blooms, Mr. CHARLES LUCKIN, Pulborough, Sussex, beat two other competitors.

Mr. COOPER had an easy win in the class for 12 blooms for Fancy Dahlias, distinct, and Mr. COUSINS, Chippenham, Wilts, was equally successful in the class for six blooms.

The Silver Challenge Cup, offered by the Crystal Palace Co. for six vases of garden Cactus Dahlias intermingled with suitable foliage, was won by the Rev. ARTHUR BRIDGE, Worth Rectory, Three Bridges, Sussex, and he also carried off the Silver Challenge Cup offered for the best exhibit of nine varieties of Cactus Dahlias shown in bunches of three blooms. The flowers of Mr. W. Marshall, H. H. Thomas, C. E. Wilkins, Snowdon, Prima Donna, and Indomitable were all excellent. 2nd, Mr. F. GRINSTEAD, Beauport Park, Battle, with another choice collection.

Mr. F. H. CURREY, 35, Osborne Road, Palmer's Green, was 1st in the class for six varieties having good blooms of Wm. Marshall, Rev. T. W. Jamieson, Brigadier, C. E. Wilkins, and Evening Star; 2nd, Mr. ED. MAWLEY, Berkhamsted.

Mr. H. PEERMAN, Glencross, Nantwich, excelled for 24 blooms shown on boards; Mr. CHAS. LUCKIN for 12 blooms; and Mr. A. P. IRONSIDE, 43, Park Lane, Chippenham, for six blooms.

Other winners of 1st prizes in the amateur classes were Mr. ED. E. BARTON, Greenwich, and Mr. TOM JONES, Ruabon, Wales.

Mr. M. V. SEALE showed the best six blooms of a variety of show or fancy Dahlia in Arthur Rawlings, and Mr. G. MORTIMER the best six blooms of a Cactus variety in C. E. Wilkins. There was very keen competition in both cases.

AWARDS.

FIRST-CLASS CERTIFICATES.

Minerva (garden Cactus).—A stiff-stemmed variety, the blooms being wine-crimson with yellow centre. Shown by Mr. C. TURNER.

Dr. Roy Appleton (Cactus).—A blush-coloured bloom with a yellow centre, very large.

New York (Cactus).—A rosy-buff coloured flower with incurving revolute florets.

Onward (Cactus).—A pink variety with twisted florets.

Sweet Briar (garden Cactus).—A variety with stout, erect stems, bearing pink flowers with white centres. These four were exhibited by MESSRS. J. STREDWICK & SON.

Cardinal (single).—A fiery red variety with yellow disc.

Mrs. Joynson Hicks (single).—A bronze-yellow flower with a crimson disc.

Glow (pompon).—An elegant flower of a rosy-buff shade flushed with mauve. These three were shown by Messrs. J. CHEAL & Sons.

NON-COMPETITIVE EXHIBITS.

Large Gold Medals were awarded to Messrs. H. CANNELL & Sons for Dahlias, and HOBBIES, LTD., for Dahlias and Roses.

Gold Medals to Messrs. T. S. WARE, LTD., for Dahlias, and Mr. J. T. WEST for Dahlias.

Silver-gilt Medals to Mr. F. BRAZIER for hardy flowers and Chrysanthemums, Mr. JOHN E. KNIGHT for Dahlias, and Mr. C. TURNER for Dahlias.

TRIAL OF SINGLE DAHLIAS.

A large deputation of members of the National Dahlia Society, with Mr. E. Mawley, V.M.H., as chairman, visited Messrs. J. Cheal & Sons' nursery at Charlwood, Crawley, Sussex, on Monday, 12th inst., for the purpose of examining a large trial of single Dahlias, conducted under the auspices of the Society and grown by this firm. The varieties were specially tested to determine their merits for garden decoration, with some consideration as to their suitability for exhibition purposes. In most cases four to six plants were seen of each variety, but in a few cases there were only two plants. There were numerous varieties, and all of them had been grown without thinning. Some were but 2½ feet, others 3½ feet or intermediate, but the heights were regarded as of less importance than habit of growth, freedom of blooming, and general effect for garden decoration. The following were awarded three marks:—Butterfly, Snowdrop, Ensign, Lady Bountiful, Amy, Winona, Rosemary, Bridge, Owen Thomas, Fugi San, Columbine, Kitty, Leslie Seale, Miss Morland, Miss Roberts, Royal Sovereign, Peggy, Rosebank Scarlet, Vesuvius, Cardinal, Mrs. Joynson Hicks, Rosy Gem, Mrs. W. Hood, and Morning Glory.

SCOTTISH HORTICULTURAL.

SEPTEMBER 6.—The monthly meeting of this association was held at 5, St. Andrew Square, Edinburgh, on this date. Mr. Massie, one of the vice-presidents, occupied the chair, and there was an attendance of 75 members.

Mr. J. S. Brunton, chairman of the Perpetual-Flowering Carnation Society, read a paper on "The Perpetual-flowering Carnation: its Past, Present, and Future." He first glanced at the historical aspect of the subject, beginning with the 16th century, when the wild *Dianthus Caryophyllus* first found a place in gardens. By the end of the same century, the plant had developed into a "border" Carnation, of which the present-day border Carnations are the direct descendants. The tree or winter-flowering type, which they called Remontants, was introduced by the French,

and was generally ascribed to Dalmatis, who was prominently identified with their cultivation about 1844; but recent investigations have shown that Remontant Carnations were grown in the South of France nearly a century earlier under the name of Mayonnaise Carnations. These Remontants were introduced into America by Chas. Marc, of New York, after 1852, and other French growers in America having taken up their improvement, varieties were raised which surpassed all previous ones. The French Remontants were entirely superseded, and, on the introduction of Peter Fisher's "Mrs. T. W. Lawson," it was sold for the record price of 300,000 dollars.

Dealing with the present, Mr. Brunton took the period from 1900 to 1910, and he asked what were the French, who in the early stages of the plant's development had scored all along the line, doing for the Carnation? In brilliancy of colouring their flowers surpassed all others, but they had one unpardonable defect—they were "bursters." He, however, was inclined to think that possibly we were sacrificing too much to obtain perfection of calyx, and though he was not prepared to advocate any falling away from the standard set up by British and American growers, he thought we should get some French blood into our present stocks. Dealing with the uses of the perpetual-flowering Carnation as a cut flower, a pot plant, and a bedding plant, he said that as a bedder it had found a place in a number of gardens. The growing of the plant for market purposes was one of the most important branches of commercial horticulture, and there were large areas of glass devoted to this industry in the neighbourhood of London and at Iver, Saïron Walden, Cheltenham, Dunstable, Balcombe, and other towns. In Guernsey hundreds of thousands of plants were grown for the export of flowers for the British market. On the continent of Europe, as well as in South Africa and Australia, the cultivation of Carnations was rapidly increasing, and the American trade in them was enormous.

Speaking of the future, Mr. Brunton said that one of the chief aims in the past had been to obtain large-sized blooms. That would always be an object for consideration, but hybridists would have to restore the Clove-like fragrance which had been sacrificed in the quest for size, form, and colour.

The exhibits at the meeting included about 50 varieties of perpetual-flowering Carnations, shown by Messrs. Todd & Co., Edinburgh; Fancy Pansies and Violas were shown by Messrs. Dobbie & Co., Edinburgh; Gloxinias and Begonias by Miss Burton, Polton; and a collection of vegetables from the City of Edinburgh Distress Committee's farm at Murieston.

The paper for the meeting to be held on October 4 will be on "Diseases of Fruit Trees," by Dr. A. W. Borthwick, Royal Botanic Garden, Edinburgh.

The annual excursion of the association took place on August 13, when, by the kind permission of the Marquis of Tweeddale and the Earl of Wemyss, about 80 of the members visited Yester and Gosford.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

SEPTEMBER 12.—The monthly meeting of this society was held at the Royal Horticultural Hall, Westminster, on the above date. Mr. Thomas Winter occupied the chair. Six new members were elected. The amount of sick pay disbursed since the last meeting was announced as £29 14s.

The annual dinner will be held on October 6 at the Waldorf Hotel, Aldwych, W.C. Mr. Edward Sherwood will preside on this occasion.

AWARDS AT THE BRUSSELS EXHIBITION.—The list of awards issued by the Superior Jury, subject to confirmation by the Belgian Executive Committee of the Exhibition, is published in the *Times*. It includes the following awards made to agriculture and horticulture:—Class 43: Appliances and Processes used in Horticulture and Arboriculture.—Diploma of Honour: **NORTH BRITISH RUBBER CO., LTD.**, Edinburgh. Gold Medal: Messrs. **ALEXANDER SHANKS & SON, LTD.**, London. Class 46: Trees, Shrubs, Ornamental Plants and Flowers.—Gold Medal: Mr. **C. ENGLEMAN**, Essex. Class 48: Horticultural and Nursery Seeds and Stock.—Gold Medal: Messrs. **SUTTON & SONS**, Reading.

Obituary.

THOMAS FRAZER.—With great regret we record the death of Thomas Frazer, for the past seven years foreman in the Royal Horticultural Society's Gardens at Wisley. The death occurred on Wednesday, the 7th inst., after an illness of only 24 hours. He had not enjoyed good health for some years, but for the last few months he had felt better, so that the end was unexpected. He served his apprenticeship in gardening under Mr. R. Simpson, gardener to Mrs. Alfred Backhouse, at Pilmore gardens, Darlington. After this time he was for some time conservatory foreman, and afterwards foreman in the fruit-forcing department at Duncombe Park, Helmsley. Three years were spent as general foreman at Heythrop Park and four years at Richings Park, Slough. From his boyhood, Mr. Frazer had a special liking for hardy flowers, and ultimately he decided to specialise in hardy herbaceous plants, spending periods at the nurseries of Messrs. Backhouse and Sons, York, Messrs. Dobbie & Co., Rothesay, and Messrs. J. Veitch & Sons, Langley. When the Royal Horticultural Society took over the Wisley gardens, Mr. Frazer was appointed foreman, and here he remained to the end,



THE LATE THOMAS FRAZER.

superintending the work in the wild garden and hardy plant departments and lecturing on practical gardening to the students. He was a man of keen observation, gifted with a wholesome sense of caustic humour, but, except to those who knew him intimately, he was a man of few words. He was esteemed for his straightforwardness and simple sincerity, whilst the young men at Wisley loved him for the willingness with which he always gave counsel and advice. He was 51 years of age. The funeral took place at Langley Churchyard, Slough, on Monday last.

WILLIAM CHARLES COOPER.—We regret to record the sudden death, from heart disease, on the 8th inst., of Mr. William Charles Cooper, in his 61st year. Deceased had been gardener to Alderman F. Budgen, Reigate, Surrey, for the past 26 years. He was one of the oldest members of the Reigate, Redhill and District Gardeners' Mutual Improvement Association, and he attended a committee meeting of this association only a few days before he died. He took a great interest also in the Borough of Reigate Cottage Garden and Horticultural Society, of which he was a member. He was a well-known judge at most of the local flower shows.

GARDENING APPOINTMENTS.

[Correspondents are requested to write the names of persons and places as legibly as possible. No charge is made for these announcements, but if a small contribution is sent, to be placed in our collecting box for the Gardeners' Orphan Fund, it will be thankfully received, and an acknowledgment made in these columns.]

Mr. H. STOPPS, for the past 64 years Gardener to T. W. THORNTON, Esq., Brockhall, Weedon, and previously Foreman at King's Waldenbury, Hitchin, as Gardener to Capt. W. B. HARRISON, Aldershaw, Lichfield, Staffs.

Mr. GEORGE DUNCAN, lately employed in Hyde Park, as Head Gardener at Radley College, Abingdon, Berks.

Mr. W. G. NEWMAN, for the past 2 years Gardener to Col. BABINGTON, and previously with Messrs. JAMES CARTER & CO. as Gardener to Mr. MACKLIN, Kingshill, Great Missenden, Buckinghamshire.

Mr. J. C. LUNNON, for the past 2 years Gardener at Bosworth House, Husbands Bosworth, Rugby, as Gardener to Rear Admiral BACON, Wolston Manor, Coventry.

Mr. GEORGE WOOLLEY, for the past 6 years Foreman in the Gardens of the Right Hon. A. J. BALFOUR, M.P., Whittingham, Prestinick, as Gardener to WALTER WEBB, Esq., Malquoits, Ewhurst, near Guildford, Surrey.

Mr. CHARLES FORD's appointment given in the issue for September 3, p. 100, should read as Gardener to Lt.-General Lord CALTHORPE, K.C.B., Perry Hall, Perry Barr, Birmingham.

Mr. J. R. WRIGHT, for 12 years Gardener to F. E. WALKER, Esq., Ravenshorpe Manor, Thirsk, Yorkshire, as Gardener to Sir ROBERT ROPNER, Preston Hall, Stockton-on-Tees, Durham.

Mr. J. PRICE, for the past 18 months Foreman in the gardens at Nork Park, Epsom, as Gardener to J. COLMAN, Esq., Wick Hall, Hove, Sussex. (Thanks for donation of 2s. to the R.G.O.F. box.—EDS.)

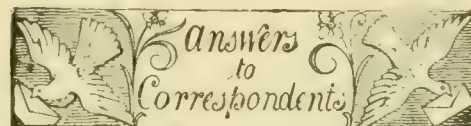
Mr. C. F. MOWL, for the past 3 years and 4 months Gardener to Sir FRANCIS WINNINGTON, Bart., Stanford Court, Worcester, and previously for many years Gardener to the late Mrs. CHAS. EDWARDS, Dolserau Hall, Dolgelly, N. Wales, as Gardener to Lieut.-Col. G. F. SCOTT, Penmaenuch, Dolgelly, N. Wales.

Mr. THOMAS IRONSIDE, for the past 3 years in the Gardens, Ragley Hall, Alcester, and previously at Lathom Gardens, Ormskirk, a Gardener to Miss COCHRANE, Seemets, Chichester, Sussex. (Thanks for 1s. for the R.G.O.F.—EDS.)

Mr. WILLIAM WOOD, for the past 3 years General Foreman at Powerscourt Gardens, Enniskerry, as Gardener to J. O. JAMESON, Esq., Dolland, Clonsilla, Co. Dublin.

Mr. THOMAS NEVITT, for 3 years Foreman at Doddington Park Gardens, Nantwich, as Gardener to Mrs. SEELY, Culmington Manor, Craven Arms, Salop.

Mr. A. E. T. ROGERS, for nearly 6 years Gardener to H. DENT BROCKLEHURST, Esq., Sudeley Castle, as Gardener to F. S. BUICE, Esq., Middlemeade, Stoughton Drive, Leicester.



Editors and Publisher.—Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the *Publisher*; and that all communications intended for publication, or referring to the Literary department, and all plants to be named, should be directed to the *Editors*. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

••• The Editors will be glad to receive, for consideration, large photographs of horticultural subjects, suitable for reproduction as Supplementary Illustrations in this Journal.

ASTERS DYING: C. G. Your Asters are attacked by *Lipura ambulans*, one of the spring-tails. Soot and lime, as you suggest, are the most efficient remedies, especially if worked into the soil, as it is in this latter that the pests breed. They are most abundant in damp soil and wet seasons.

BARK INFESTED WITH INSECTS: G. D. E. The pieces of bark are badly attacked by a species of chermes. These belong to the green fly or aphid family. The trees should be washed with paraffin emulsion in the spring, and again later when the larvae are hatching out.

BEGONIA FLOWER MALFORMED: A. C. The blooms exhibit cresting, a character that is fixed in some varieties.

BEGONIA GLOIRE DE LORRAINE: J. H. C. The injury is caused by an eelworm in the leaves—*Aphelenchus olesistius*. The pest breeds in the soil. Dust the stems when damp, and also the surface of the soil, with a mixture of Tobacco dust and flowers of sulphur.

CARNATIONS DISEASED: *A. I. M.* Carnation rust is present. If the plants are not blooming, spray the foliage with Bordeaux Mixture at half strength. Otherwise, sponge the leaves with a rose-red solution of permanganate of potash.

CLEMATIS FOR EXAMINATION: *Old Subscriber.* No American Blight is present on the specimen you send, but it has been injured by a mining maggot. Remove the surface soil, and replace it by fresh. Ammonia water can only be used when there is no crop on the land. One gallon in 25 gallons of water is the proper proportion.

CLUB LIKE OUTGROWTHS ON PEA ROOTS: *Richmond.* The knots on the roots are normal productions. They are not due to inferior seed, nor are they a cause of failure of crop.

CORDON APPLE TREES: *E. C.* We advise you to take out the second row which was planted two years ago. Lift the trees when they have shed their foliage in the late autumn, and transplant and train them as you suggest. This will leave a clear space of 3 feet in the row between the trees that were planted three years ago, but, as no useful purpose will be served by allowing a space of more than 2 feet between the Cordons in the row, these should be rearranged. Take up every other tree, and plant two of the two year old trees, thus giving them all a space of 2 feet. Shorten the roots a little before replanting, and train the stems to the wires at the same angle as before. Thus trained the trees make a more fruitful growth than would be the case were they trained in an upright position; the slight check thus given to the flow of the sap causes the wood-buds to push more regularly into growth the entire length of the stems. Your views regarding the evils resulting from the crossing of the two rows of Cordons, as in your case, are quite correct.

CYANIDING PLANT HOUSES: *H. W.* The quantities given on p. 171 were intended for 1,000 cubic feet interior space.

FIG TREE FAILING TO FRUIT: *E. C.* A Fig tree planted against a south wall should bear fruit if the branches are properly thinned and the young growths pinched during the summer months. Your tree may have been allowed to make uninterrupted growth ever since it was planted, and this would account for its not bearing fruit. Fig trees should be pruned early in May, as soon as they begin to push into leaf. By pruning the trees at that season the wounds "bleed" very little, as the expanding leaves draw away the sap; moreover, it can then be determined which of the shoots are best furnished with embryo fruits. These should be retained, cutting away many of the old shoots that are not required to furnish the wall or trellis. Allow a space of 6 inches between the branches, which should be trained in the shape of a fan, laying in one shoot of the current year's growth between these. Pinch out the points of any extra strong shoots when about 2 feet long and the weaker ones at 18 inches. Even at this late date a judicious removal of superfluous growths of the current year would prove beneficial in admitting light and air to ripen up the remaining shoots. A little root pruning some time in September would also be helpful. Simply dig out a trench at about 2 feet from the stem of the tree, cutting away all roots found outside the 2 feet space, and working out some of the soil from under the base of the tree, so as to cut clean away any extra strong roots that are growing downward. Replace the soil with the addition of a little lime rubble or old plaster. Thus treated, your Fig tree should bear fruit next year, and a full crop the following and succeeding years.

GRAPES: *D. W. C. H.* There is no disease present. The unfavourable appearance of the berries is the result of wrong cultural treatment.

HARDY HERBACEOUS PERENNIALS: *J. E.* (1) The following kinds of herbaceous perennials will flower before the end of June; *Aconitum Napellus* and its varieties, *Alstroemeria aurantiaca*, *Anchusa italica*, "Dropmore variety," *Anthericum Liliago*, *Aquilegia* of various kinds, *Baptisia australis*, *Campanula latifolia macrantha*, *C. latiloba*, *C. persicifolia* and varieties, *Centaurea montana*, *Coreopsis grand-*

flora, *Delphiniums* in variety, *Dictamnus albus*, *Eremurus robustus*, *Geum coccineum*, *Gypsophila paniculata*, *Hemerocallis flava*, *Iris laevigata*, *Lupinus polyphyllus*, *Oenothera fruticosa*, *Paeonia albiflora*, *Potentilla atrosanguinea*, *Primula japonica*, *Scabiosa caucasica*, and *Thermopsis montana*. (2) The best time to root shoots of *Romneya Coulteri* is in spring. Select portions of the roots, cut them into lengths of 3 inches, and insert them in sandy loam, so that the top of the cutting is placed well below the surface of the soil. If warmth is afforded, it will be an advantage, but the cuttings will also form roots in a cold frame kept closed.

MELON DISEASED: *Foreman.* The trouble is due to Melon-rot, caused by *Sclerotium melophthorum*. When quite young, the fruit should be sprayed with liver of sulphur at the strength of 1 ounce in two gallons of water. The disease usually occurs on the leaves first, and later passes on to the fruit. No disease is present on the Carnation.

NAMES OF FRUITS: *S. M.* Brandley's Seedling.—*W. D. & S.* Worcester Pearmain.—*Carl Dahl, Sweden.* Jargonelle, a well-known variety in this country.—*Constant Reader.* Nectarine Elrue.

NAMES OF PLANTS: *A. H., Cromer.* 1, *Rudbeckia laciniata* fl. pl.; 2, *Lonicera Periclymenum*; 3, *Veronica spicata*; 4, *Senecio compactus*; 5, *Solidago lanceolata*.—*F. J. R.* 1, *Chrysanthemum lacustre*; 2, *Sedum spectabile*; 3, *Centranthus ruber*; 4, *Helenium autumnale* caputem; 5, *Helianthus multiflorus* fl. pl.; 6, *Statice latifolia*.—*J. D. H.* 5, *Helichrysum Stoechas*.—*R. C. Day.* *Fraxinus Ornus*, the Manna Ash.—*Shrubbery.* 1, *Gymnocladus canadensis*; 2, *Cladrastis tinctoria*; 3, *Calluna vulgaris* fl. pl., the double-flowered Ling.—*Old Subscriber.* 1, not found; 2, *Cytisus capitatus*; 3, *Solidago virgaurea*; 4, *Erica cinerea*; 5, *Calluna vulgaris*; 6, *Linaria cymbalaria*.—*A. T.* 1, *Cistus villosus*; 2, *Hibiscus syriacus*; 3, *Clerodendron fortitum*; 4, *Verbascum phoeniceum album*.—*S. H. H.* 1, *Helianthus multiflorus maximus*; 2, *H. Soleil d'Or*; 3, *H. multiflorus* fl. pl.; 4, *H. multiflorus* (type); 5, *H. mollis*; 6, *Solidago virgaurea nana*; 7, *S. Shortii*; 8, *S. multiradiata*; 9, 10 and 11, varieties of *Aster Novae Belgii*; 14, *Sedum spectabile*; 15, Probably *Saxifraga* (Megasea) *cordifolia*. Send when in flower.—*A. P.* *Origanum sypyleum*.—*A. C. L.* *Ginkgo biloba*; Maidenhair Tree.—*Aria.* *Cattleya Imperator* (granulosa × labiata).—*F. H.* 1, *Cochlioda sanguinea*; 2, *Odontoglossum Lindleyanum*; 3, *Ada aurantiaca*; 4, *Oncidium pubes*.—*Foreman.* 1, *Polypodium vulgare*; 2, *Adiantum Capillus-veneris*; 3, *Lastrea rigida*; 4, *Asplenium trichomanes*; 5, *A. viride*.—*G. M., Derby.* 1, *Solanum nigrum*; 2, *Polygonum cuspidatum*; 3, *Hypericum Androsæum*; 4, *Rosa rugosa*; 5, *Aster serotina*; 6, *Plystichium angulare*.—*P. E. N.* The *Dendrobium* was not found.

NECTARINE TREE UNSATISFACTORY: *A. B.* The tree is perfectly healthy, and no fungus or insect injury is present on the fruit. The trouble is due to some error in culture.

PÆONY FLOWERED DAHLIA: *I. G.* The variety is pretty, but does not show any advance on those already in cultivation.

PEACHES DROPPING: *Constant Reader.* Your system of culture appears to be correct. The only reason that we can suggest for the fruits dropping is that they were fully ripe, as were those you sent us. If they dropped when quite hard, the trouble may be due to over-cropping. The variety received should have been ripe at least a week or two since, as fire heat was provided earlier in the season.

PEACH SEA EGLE: *J. W.* This variety is never first-class, even when well grown. As your specimen only weighed 2½ ounces, owing, possibly, to overcropping, or some other defect in the culture, we are not surprised at the lack of flavour. Fruits of this variety should weigh from 12 ounces to 14 ounces.

PLUMS AND NECTARINES GUMMING: *Dun.* Gumming may be arrested by the application of common salt. This should be sprinkled on the soil under the trees at intervals, arranging so that 3 lbs. of salt is used during a year.

ROSES DYING: *H. B. J.* The stems are attacked by the Rose canker fungus—*Coniophthium Fuckelii*. When the canker first appears in the form of a reddish-purple stain on the bark, it should be painted over with Stockholm tar, to which a trace of creosote is added.

TENNIS LAWN: *G. G.* With a view to leaving your flower border and Laurel hedge undisturbed, as well as to economise labour, and, at the same time, preserve your Chestnut trees in a healthy condition, we should advise you to remove the necessary soil from the positions marked A and entrance side of tennis lawn on your sketch. Make the lawn nearly—if not quite—on a level with the low points (B, B, B, and the Chestnuts). The ground thus lowered may be made to slope in a straight longitudinal line inward, 18 inches from the surface of the flower border down to the newly-made horizontal plane, more or less, according to the natural run of the undisturbed ground. This sloping bank at the side and ends of the tennis lawn would not only afford support to the somewhat elevated flower border, but would also give a finish to the whole work when completed. The greensward entrance to the tennis lawn would be lowered for a distance of 10 feet or 12 feet in an outward curving direction, and about 6 feet wide, to correspond with the altered level of the tennis lawn, the soil sloping outward on either side to the natural level of the adjoining greensward. Cinders, coarse gravel, or brickbats broken into fairly small pieces and laid on evenly over the ground to the thickness of 4 or 5 inches would afford a good drainage. These materials should be covered with soil to the thickness of 9 or 10 inches, made firm and level, with a little fine soil on the top on which to relay the turves, that is if the grass is free from weeds. Otherwise, a good mixture of lawn grass seed should be sown evenly and fairly thickly, as soon as the ground is ready, say, the end of the present month, or early in October, scattering a little fine soil over the seed, raking it over with a fine rake, and afterwards rolling it, in order to compress the seed and soil, and, at the same time, produce a firm, even surface. If the seeds cannot be sown at the time indicated, let them be sown at about the end of February, or as early in March as the condition of the ground will permit of the work being done. If the old turves are good enough to relay, a mixture of fine soil and leaf-mould should be scattered over them, and brushed well about, so as to fill in the spaces between them and the newly-laid turves should be rolled frequently after rain, in order to produce a firm, even surface. The lawn should be ready for the tennis players next season. To raise the earth 4 feet high around the Chestnut trees would shorten their lives and mar their appearance in the near future. Should you find it necessary to raise the ground a foot or so at the spot marked B B B in your sketch plan, make a good, firm bank, sloping 2 or 3 feet in the direction of the plantation. This will be sufficient to resist any lateral pressure.

TOMATOS FAILING TO COLOUR: *Tuffy.* The trouble is due to a lack of potash in the soil. Dress the ground with sulphate of potash.

TRANSPLANTING DENDROMECON RIGIDUM: *F. A Hyde.* This plant is more difficult to transplant than *Romneya*, and it is not advisable to shift your specimen if the plant is of fairly large size. It would be better to take some cuttings and grow them on in a pot. Cuttings of young wood taken off with a heel or small piece of the old stem will root in early summer if placed in a close, warm frame.

VEGETABLES FOR NORTHERN NIGERIA: *J. H. E.* Most of the quick maturing vegetables might possibly be grown in certain seasons. The following might be sent for trial:—Cabbage, Carrots, Cauliflowers, Peas, Parsnips, French Beans, Runner Beans, Spinach and Leeks.

Communications Received.—*J. Mc. K.*—*R. B. L.* & Sons—*F. C. P.*—*T. H.*—*A. O. J.*—*A. S.*—*A. Constant Reader*—*R. M.*, Sussex—*H. W.*—*S. B.* & Sons, Ltd.—*J. A. J.*—*B. A.*—*Aria*—*W. S. H.*, Letchworth—*G. H. L.*, Gardener *W. L. L.*—*J. W.*—*F. A. E.*—*A. H. D.*, Andover—*Foreman J. P.*, Birmingham—*Kewite*—*H. J. E.*—*R. W.* & Co.—*Dr. K.*, G. W. L.—*S. A.*—*J. J. W.*—*W. A. C.*—*R. P.*—*T. H.*—*W. W. P.*—*B. G.*—*J. C.* Nyman—*Chloris*—*F. Boukell*—*Dr. J. B. F.*—*A. R. H.*—*R. P.*—*B. E. K. R.*—*An Old Reader*—*H. H.*—*A. Reader*—*W. J.*—*W. B. H.*—*K. & Sons*—*T. S. W.*, Ltd.—*Enquirer*—*E. W.* & Sons—*A. A.*—*H. R.*—*A. D. H.*—*R. J. B.*—*A. H. P.*—*A. C. L.*—*U. H.*—*A. W.*—*W. F. G.*—*F. M.*—*W.*



MILTONIA VEXILLARIA, AS CULTIVATED BY SIR GEORGE HOLFORD, K.C.V.O.

THE VARIETY "SNOWFLAKE" IS SHOWN ABOVE AND "VIRGINALE" BELOW.



THE

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SUMMER FLOWERS IN THE SOUTH-WEST.

THE indifferent weather experienced this summer, characterized as it was by a heavy rainfall and absence of sunshine, has rendered the garden a less agreeable resort than usual. In South Devon not a single spell of fine weather was experienced in the months of June, July and August, but rains and strong winds were frequent. The rain, however, had no adverse effect on the flowers which, indeed, owing to the absence of hot sunshine, remained in beauty for a longer period than usual. One of the most lovely sights in the garden during the summer was furnished by some plants of *Ipomœa rubro-cerulea* growing against a wall. These cover a space of about 7 feet in length and range from 6 feet to 9 feet in height. The seeds were sown in heat in May, and the seedlings were planted out in June, when they were about 18 inches high. They commenced to flower in July, and since that time fresh blossoms have expanded every morning. Painted wire netting is strained against the wall at a distance of 2 inches from it, and up this they have climbed, making many side shoots, and completely covering the wall. Every morning there are still 40 to 60 fresh flowers, and the sight of the expanse of sky-blue that they provide is very beautiful. On sunny

days the flowers commence to close and fade about noon, but on dull days they retain their beauty until 4 o'clock or later. In the first week of June, *Abutilon vitifolium* was at its best, the lavender-coloured type and the white variety being equally charming. In Devon and Cornwall there are many fine specimens, some of them being fully 20 feet in height, but it is not a long-lived plant, and amongst these large examples there are frequent deaths. *Agapanthus umbellatus*, which here forms huge clumps in the open, did not flower as profusely as usual, doubtless owing to the dull summer of last year. The blue type and its white variety, as well as the deciduous white species, are grown, and they are very handsome when in full flower. The Dropmore variety of *Anchusa italica* was a glorious sight, one great group about 6 feet across and 3 feet through being a sheet of the richest blue nearly 7 feet in height. *Salvia dichroa*, which had to be shifted into another garden last November, was only 7 feet in height this year, but it presented a pretty picture with its long flower-heads of lavender-blue and white flowers. This *Salvia* is a native of the Atlas Mountains, in North Africa, and, I believe, is not in commerce. I have, however, distributed seed to a number of friends. When in the zenith of its beauty it is quite the glory of the garden. *Jaborosa integrifolia* is a very little-known plant, but is worthy of a place in the garden. It is a native of Buenos Ayres, but here it is perfectly hardy. Every autumn it dies down and disappears entirely, but it produces fresh growth late in spring. It bears white blossoms strongly resembling those of *Nicotiana affinis*, which have a pleasant fragrance and are carried on stems about 8 inches in height. It is a tremendous spreader, and will quickly overwhelm less vigorous neighbours, unless rigidly kept within bounds. *Watsonia Ardernei* with white flowers, *W. rosea* with flesh-pink blossoms, and *W. Meriana* combined with scarlet blooms all flowered well. *Coccinea* is a handsome plant, rivalling the brightest of the *Gladioli* in its colouring. The so-called Snowdrop Tree, *Clethra arborea*, from Madeira, moved in November, stood the shift well, and in August bore many branching flower-racemes with white, bell-shaped blossoms. It is a pretty sight when in bloom, and is perfectly hardy in the south-west. A fine specimen of *Fremontia californica* bore its deep-yellow, cup-shaped flowers for many weeks. This handsome shrub is rather a capricious plant, when it reaches a large size it is apt to die suddenly without any apparent cause. Numbers of fine plants have been lost in this manner.

In a neighbouring garden there is the finest specimen of the Chilean Nut, *Guevina Avellana*, in England. The tree is 22 feet in height and about 18 feet in diameter. Its large, deeply-cut leaves have a very ornamental appearance, and in September it bears hundreds of flower-spikes about 4 inches in length, each with some two dozen small, ivory-white blossoms with narrow, twisted petals and stamens half an inch long. The flowers are followed by fruits about the size of a marble, at first green and then crimson. The Fire Bush, *Embothrium coccineum*, was a glorious sight in Cornish gardens in June, large trees 40 feet in height being a blaze of vermilion and lighting up the

landscape with their vivid colour. It is not, apparently, a very long-lived tree, and many of the finest specimens have died. *Indigofera decora alba* is far superior in beauty to the better-known *I. Gerardiana*. When in full bloom and crowded with hundreds of its white blossoms it presents a charming sight. *Plagianthus Lyallii* bore its white blossoms, which much resemble the flowers of the wild Cherry Tree, in great abundance, and they were welcomed for indoor decoration. The plant originally came to me from New Zealand as a little rooted cutting in a tin box, but from the first it grew away vigorously, and is now 12 feet high. I have lately received a plant named *Plagianthus Lyallii grandiflora*, but whether it will differ from the type remains to be seen. A plant of *Mutisia decurrens*, which made good growth and flowered well for seven seasons, began to fail from some unexplained cause last summer and died in September. I managed to obtain another plant, which is doing well up to the present, but even if it succeeds it will be a year or two before it blooms. Last autumn I was given a plant of *Mutisia Clematis*, which has made enormous growth, being over 10 feet high and 15 feet across, but although I have been looking for flowers all the summer, not one has yet appeared. Another climber which has made exceptionally vigorous growth, but has not flowered, is *Pueraria Thunbergiana*. Its season's shoots now measure 24 feet, but there has been no sign of a flower. A plant in a friend's garden at Ryde behaves in the same manner. However, Mr. Gauntlett, who was here the other day, informed me that he had a plant at his old nursery at Redruth which flowers profusely every year, so I hope that mine will bear flowers another season. *Mitraria coccinea* was a splendid sight when covered with its scarlet, urn-shaped, drooping flowers. Here it is grown against a wall, but it also does well as a bush in the south-west. Being a native of the Island of Chiloe, which is said to be one of the wettest spots in the world, it requires an abundant supply of water during the spring and summer. *Bowkeria Gerardiana*, a fine specimen 7 feet 8 inches high and 7 feet through, stood the shift excellently, and has never flowered better than it did this summer, when it was literally covered with its white, *Calceolaria*-like, flattened blossoms. It is a handsome-flowering shrub, but is not yet, I believe, in commerce. The large shrub of *Buddleia Colvilei*, 10 feet high, which bloomed profusely last summer, unfortunately died after the shift, and has been replaced by one of its own seedlings, but this *Buddleia* will not, apparently, flower until it is about 8 feet high, so some time must elapse before the seedling blooms. Another plant that was lost was a very fine example of *Olearia nitida*, 8 feet in height, and as much through. This has also been replaced, but it will be a long time before its successor attains similar dimensions. *Lonicera Hildebrandtiana*, on a north-west wall, has been magnificent this year, and has borne quite 100 flower-clusters. The great blossoms, 6 inches long and 5 inches across at the mouth, are at first white, but ultimately change to rich orange, and they are deliciously scented. I at first thought, from what the late Rev. Henry Ewbank told me, that its position was too shady for it to flower, as it only gets the



FIG. 89.—*BIDENS DAHLIOIDES*, WHITE VARIETY, FROM SPECIMENS SUPPLIED
BY MR. W. E. GUMBLETON.

sun for three hours in the day. However, it could not be a greater success. *Mandevilla suaveolens* is trained round a first-floor verandah, and from there spreads over a wall, and evidently appreciates the heat of the stones, for on the wall it flowers abundantly, whilst it rarely produces blooms on the verandah. *Semele androgyna*, of which there is a fine plant with growths 18 feet in length, has set fruit this year for the first time. *Tacsonia mixta quitensis*, put in as a plant 2 feet high last November, has made growths 15 feet long, but has not flowered, nor has *Actinidia chinensis*. The climbing Monkshood, *Aconitum Hemsleyanum*, grew 10 feet high, and produced a quantity of purple-blue blossoms on long, very slender, drooping stems. It is a pretty plant, and the flowers are valuable for indoor decoration. This season has been remarkable for the way in which a number of spring-flowering plants have bloomed a second time. *Choisya ternata* and *Pittosporum Tobira* are always autumn flowerers in the south-west, but this year other plants have followed their example. *Euryops virgineus*, which was a sheet of flower in March, is now again thickly set with blossom. *Abelia floribunda*, which was covered with bloom in the spring, came into flower again in August, and a large plant of *Lathyrus pubescens*, which bloomed abundantly in May, produced several flower-spikes in August and September. W. J. G. Fitzherbert.

BIDENS DAHLIOIDES.

THE genus *Bidens* is a very extensive one, and members of it are found in most parts of the world, but rich as it is in number of species, few of these are decorative garden plants. The genus is represented in the British flora by *B. cernua* and *B. tripartita*, two weedy-looking species. An exception to the general character of this genus is the plant shown in the illustration at fig. 89, prepared from specimens which flowered in Mr. W. E. Gumbleton's garden at Belgrove, Co. Cork. In botanical characters *Bidens* is closely allied to *Cosmos* and *Dahlia*. It differs from *Cosmos* chiefly in not having any beaks in the achenes, otherwise they are very similar in habit and flowers. *B. dahlioides* has large, showy flowers; it grows about 2 feet high, and has pinnate leaves composed of 3 to 7 leaflets, and solitary flower heads produced on long peduncles. The flowers vary in colour from rose purple to white, and are about 3 inches in diameter, the ray florets being $\frac{2}{3}$ of an inch wide. In habit the plant is very similar to the well-known *Cosmos diversifolius*, with the same *Dahlia*-like tubers produced from the base of the stem. In *Cosmos*, however, the ray florets are incised at the apex, while those of the *Bidens* are entire. *B. dahlioides* is a native of Mexico, and was found by Sereno Watson on the grassy slopes of Flor de Maria, growing at an elevation of 8,300 feet. Watson describes it as a new species in 1891 in the *Proceedings of the American Academy*, xxvi., p. 142. Mr. Gumbleton received seeds from Mr. Purpus, whilst Kew received some from Darmstadt Botanic Garden this spring. They were raised in heat and planted out as soon as they were large enough, commencing to flower in August, and being still in bloom. The plant is perennial, but will have to be stored in winter like a *Dahlia*, except in favourable situations. The variety figured had pure white flowers, but this form is very rare, for Mr. Gumbleton states that only 25 out of 500 seedlings had white flowers. The others were all shades of pink, purple, and rose. Mr. Gumbleton's plants have yielded mature seeds. W. J.

GARDENING AT THE JAPAN-BRITISH EXHIBITION.

THE Japan-British Exhibition at Shepherd's Bush, which is now drawing to a close, has been more than usually interesting to gardeners. The two gardens designed by Mr. H. Isawa, a celebrated Japanese landscape gardener, have been referred to on a previous occasion, when the details of their construction were described (see *Gard. Chron.*, April 16, p. 243). Whilst these gardens have attracted great attention, gardeners have found further features of interest in the display of Japanese plants, stone lanterns, and other ornaments characteristic of Japanese gardens, contributed by the Yokohama Nursery Co., the models of Japanese tea-gardens, the pigmy trees, and the general flower-gardening in the grounds of the exhibition, to which several nursery firms have contributed. The smaller

Most of the plants employed at Shepherd's Bush were imported direct from Japan, and many of them suffered from the effects of drought in transit: so much that they never recovered. There are to be seen large Conifers and some big Wisterias quite dead, and these mar the effect. Another fault is the employment of too many common shrubs, such as Privet and Aucuba. The plants which appear most at home are the beautiful *Sciadopitys verticillata* and, around the edge of the water, *Juniperus chinensis procumbens*. Other subjects that have grown fairly well are Maples, *Thuja obtusa*, *Azaleas*, *Cycas revoluta*, *Bambusa*, *Cupressus Lawsoniana*, *Nandina domestica*, *Lagerstromia indica*, *Paeonia Moutan*, *Lespedeza bicolor* (a common, autumn-flowering shrub in Japan, where it is known as Hagi), and *Liliums*, including *L. speciosum*, *L. auratum*, and *L. tigrinum*. The struc-

ture vary from 25 to 300 years. The plant that lends itself best to this system of training is *Thuja obtusa*, of which there is a very remarkable specimen in the "Garden of Peace." The plant illustrated in fig. 95, shown by the Yokohama Nursery Co., was awarded a silver cup offered by the Royal Horticultural Society for the finest example in the exhibition. A representative of the firm furnished us with the following details of the treatment of these plants:—

"During spring and summer it is preferable to keep them in a sunny, airy situation, where the wind passes freely through the branches. The soil should be kept moist, but not too wet. During the winter the trees should be placed in a cold greenhouse or unheated orangery, and the roots should be watered sparingly. Repotting is necessary once in two or three years, and the operation should be carried out in May.



FIG. 90.—"GARDEN OF PEACE" IN THE JAPAN-BRITISH EXHIBITION.

(Photograph by John Gregory.)

of Mr. Isawa's gardens, known as "The Garden of Peace," is illustrated in fig. 90; the other, termed "The Floating Garden," in fig. 91. In judging these gardens it should be remembered that, in exhibits of a temporary character, it is difficult to prevent the appearance of artificiality. It is an easy task to build and plant, but the great factor in landscape formation is time. With age, the plants appear to adapt themselves to their places; rocks and stones get weather worn, and streams become overhung with trees and margined with flowers. The visitor, therefore, who expects to see a veritable Japanese garden, bodily transported, as it were, from some corner of Japan, is disappointed. The gardens have, no doubt, served to supply many a useful hint to those who contemplate the formation of a "Japanese" garden in this country.

ture scene in fig. 90 is a modern, Japanese dwelling-house. The hog-backed bridge is a characteristic feature in Japanese scenery, and the garden contains many stone lanterns and pagodas, quaint arches, reed-covered summer-houses, lattice-work fencing in bamboo, pergolas covered with Wisterias, and other features generally associated with gardens in Japan. In fig. 92 is illustrated a collection of pigmy trees exhibited by the Yokohama Nursery Co. This firm exhibited 2,000 plants, the principal subjects being *Thuja obtusa*, *Pinus pentaphylla*, *P. massoniana*, *Larix leptolepis*, *Juniperus procumbens*, *J. rigida*, *Tsuga Sieboldii*, *Cryptomeria japonica*, *Acers*, *Quercus dentata*, *Styrax japonica*, *Lagerströmia indica*, *Punica Granatum* (Pomegranate), *Cerasus*, *Wistaria*, *Crataegus cuneata*, *Zelkova Keakii*, *Euonymus alatus*, *Hedera* and *Bambusa*. The ages of some of

Lift the tree out of the pot, remove about one-third of the old soil, and replace it in the same pot, supplying rich, fresh soil. To maintain the dwarfness of the tree pinch back the young growths in spring and summer."

Some branched Cycads were brought to our notice. They are found growing deep in the soil, the branches being formed underground. These plants are rare and they are valued at from £10 to £20 each.

This Yokohama firm exhibits a fine collection of stone lanterns (see fig. 96) fashioned like those of a bygone age, the originals being now very scarce and eagerly sought after in Japan. They are made of granite, and were formerly lighted with oil lamps.

Miniature gardens, such as is illustrated in fig. 94, are another speciality of this firm. The model now reproduced is shown by the

City of Tokyo, and occupies only a few square feet on a table. It represents a tea-garden with streams of water and buildings. The tiny trees range in age from 130 to 150 years and they include *Pinus pentaphylla*, *Juniperus litoralis*, *J. chinensis* var. *Byaku-shin*, *Acer pictum* var. *Takiwa-Kæde*, *A. palmatum* var. *Tama momiji*, *Bambusa* "Hakone-Kauchiku," *Zelkova acuminata*, *Cryptomeria japonica*, *Buxus sempervirens* var. *microphylla*, and *Cryptomeria japonica* var. *Birodo-sugi*. The stones were obtained from various parts of Japan. There is a companion model representing a palace garden with shrine and bridge, the whole modelled after the fashion of Japanese gardens in the fourteenth and fifteenth centuries.

To-day (Saturday) is Japan's national holiday, and the gardens and lagoons will be brightly decorated.

THE ROSARY.

OLD AND NEW VARIETIES.

A FRIEND made the remark recently that the new Roses had not the scent of the older varieties; and another expressed the opinion that there were no great improvements in the flowers themselves. The Gallica, Damask, Bourbon, and Provence varieties still appealed to them most, while only a few of the older varieties from other sections raised their enthusiasm, *Gloire de Dijon*, *General Jacqueminot*, *La France*, *Maréchal Niel*, and about a score of other old favourites being approved. They were aged people mainly, and no doubt many old remembrances crowded upon their minds when seeing the class of Roses described.

If we examine some of the old Roses and com-

or class of Rose is considered, there has been a vast improvement, and there seems every probability of this advance continuing. One has to search the country to find any quantity of nursery-grown "Old Damask." But, in freedom of flowering, hardiness, size and form, adaptability for special purposes, and, above all, the beautiful and varied combinations of colour, the Roses of a generation ago cannot be compared to the newer ones. A. P.

ROSA WICHURAIANA.

ALTHOUGH *Rosa Wichuraiana* is largely employed on pergolas and other exposed structures, from the experience of a number of years I have learned that it is a mistake to plant this Rose in a draughty situation or in one where it is much exposed to strong winds. I grow a number of plants in different positions, and they succeed



FIG. 91.—"THE FLOATING GARDEN" AT THE JAPAN-BRITISH EXHIBITION.

[Photograph by John Gregory.]

(See p. 227.)

PYRUS CORONARIA FL. PL.

THE double variety of this species is worthy of a place among the best of the *Pyruses* remarkable for the beauty of their blossoms, as it possesses several desirable features. The typical *Pyrus coronaria* is a native of a considerable district in the United States, but it is most plentiful in Pennsylvania and Virginia. It there takes the place of our native Crab, from which it differs in several well-marked particulars. Among other distinctions are the partially-lobed leaves, the fact that it flowers very late, and the pleasing violet-like fragrance of the pink-tinged blossoms. The variety *flore plena* has bold, semi-double flowers about $1\frac{1}{2}$ inch in diameter, but in other respects they are the same as those of the type. While some forms of *Pyrus*, such as the Japanese *P. floribunda*, are planted extensively, the merits of *P. coronaria* are often overlooked. W.

pare their scent with modern varieties, it will be found that the newer ones are equally as fragrant. True there is something delightfully sweet in a flower of *Tuscany*, *Gloire de Dijon*, *La France*, or *General Jacqueminot*: but many prefer the perfume of *Viscountess Folkestone*, *Beryl*, *Mme. Ravary*, *Mme. Abel Chatenay*, and scores of other new Roses that will readily occur to any Rose lover.

With regard to the statement that there is no improvement in the blooms themselves, I think it was at the Crystal Palace, in 1894, that the late Lord Penzance put up several boxes of these old Roses. I was greatly interested in them, and must confess to lingering a greater while before them than at any other exhibit. My chief interest was in verifying the names of some I was uncertain about, and also because they were the ancestors of the glorious Roses in other parts of the show.

I contend that it matters little which section

best in the most sheltered place, where the plants produce long sprays of pliant branches covered with leaves of the glossiest and brightest green and deliciously fragrant flowers. In another place, a specimen is exposed to strong winds. This plant grows slowly, makes short and stunted branches, while the flowers are often imperfect and lack the beauty and some of the fragrance of those growing in more congenial conditions. In the other parts of my garden the same results can be seen in a lesser degree, according to the amount of exposure. The hybrids do not appear to be so tender; I have some of these in fully-exposed situations, and they are unaffected. The hybrid which suffers most in this respect is *Dorothy Perkins*, but it is not quite so susceptible to the effects of the draughts as the typical *Rosa Wichuraiana*. A few notes on the subject of wind and draught-resisting Roses from the pen of an experienced rosarian would be extremely valuable. S. A.

FRUIT REGISTER.

COLOURING OF GRAPES.

THERE are several causes for lack of colour in Grapes. Very heavy cropping may be responsible, and in this respect it is to be observed that what may prove an overcrop on one set of vines might be carried without injury by another set; again, much depends on the soil, locality, form of vinery, and present and previous treatment of the vines. A cause of weakness may sometimes be traced to insufficient foliage in comparison with the weight of fruit, or foliage which is comparatively thin or injured by insects.

Foliage pressing against the glass and thereby subject to sudden and wide variations of temperature; insufficient ventilation from the stoning period onwards and excessively high temperatures are all against the well-being of the vines. In some instances the borders are made too deep, so that the soil and many of the roots are insufficiently aerated; or the borders contain too much nitrogenous material when first made (I have known this to be the case when no farmyard or other manure has been used, but the turf from old pasture land, rich in fibre and used while quite fresh). Yet another cause of the berries not colouring properly is too much damping both of the foliage and the surface of the soil. The foliage, when saturated for long periods together, does not transpire properly, whilst the surface of the soil becomes pasty or perhaps slimy, and incapable of admitting sufficient air to the roots. Heavy mulchings of manure, especially of cow manure, also prevents both air and warmth reaching the roots.

All these, and some other reasons, including too much light, may be given for the deficient colouring of black Grapes, but there are cases where, though none of these faults can be discovered, the colouring is defective.

Having had the superintendence of several vineries for different people, my experience is considerable. In most cases, where the roots are not out of reach (they may be found sometimes to have deserted the prepared border and to have travelled 40 feet or more away), there has been an improvement in colour after a year or two of my taking charge of the vinery.

Accompanied by this improvement in colour, I find that there is a difference in the skin of the fruit. The red berries (not shanked, but perfect-looking ones, except in colour) have thin skins, which melt in the mouth; partially black berries have skins somewhat thicker, while the jet-black fruits have comparatively thick and tough skins. Allowance must be made for the different varieties. The skins of Gros Colman, West's St. Peter's, and Gros Guillaume (Barbarossa) are never thick or tough, but the blacker these Grapes are the thicker are the skins. Then as to flavour, the red ones may be perfectly sweet and melting, but there is an absence of that peculiar, refreshing, vinous flavour found in a perfect berry of Black Hamburg six weeks after it has begun to colour.

What can be the reason of the differences mentioned when none of the cultural faults alluded to can be detected?

There are many people who have not a palate sufficiently perfect to detect slight peculiarities of flavour. They will declare that a fruit which is sweet and juicy is deliciously flavoured when it is merely so much sugar and water. No fruit ever has its proper flavour unless it has its proper colour, and no black variety of Grape was ever perfect unless its colouring preceded its ripening. Black Grapes, supposing cultural details to be correct, colour best, as far as the southern and western counties are concerned, in cold houses. Even this season, I can instance Black Hamburgs which were perfectly black on August 9, and perfectly ripe on August 23, where no artificial heat was employed.

But what I desire to know is, whether a comparatively thin skin on what should be black

Grapes is a general accompaniment of want of colour.

There are some varieties, mostly inferior in quality, which develop colour under conditions which are not altogether the best. Such are Black Alicante, Gros Maroc, and Alnwick Seedling. But this is not the case with Madresfield Court or Black Hamburg. *Wm. Taylor, Bath.*

NEW OR NOTEWORTHY PLANTS.

MORMODES WOLTERIANA AND CATASETUM TENEBROSUM.

THESE are two new species of the group of Orchids, called appropriately by Reichenbach by the name Eborilingues or ivory-lipped Orchids, from Peruvia, which have flowered with Mr. P. Wolter, Magdeburg, the introducer. In habit of growth neither species has any particular features to distinguish it, but the flowers of one of the species are different from all the allied species, whilst those of the other are amongst the most striking flowers in the vast family of Orchids.

*Mormodes Wolteriana** resembles, at first sight, the well-known and rather polymorphous *Mormodes buccinator*, but differs therefrom in that, firstly, the lip is three lobed like that of *M. pardina*, quite a different species, and, secondly, the lip of the lower flower of the spike is nearly twice as large as in the upper flowers. The colour is somewhat similar to that of *M. buccinator* var. *aurantiaca*: the lip is hazy inside, and parts of the column are also hazy. The sepals and petals are spreading and more in the way of *M. buccinator*, not curved inwards like those of *M. pardina*. The inflorescence bears six flowers.

The flowers of *Catasetum tenebrosus*†, as I have called it, seem, at first sight, black with a greenish-yellow lip. Neither in *Cologyne pandurata* and its allies, nor in any other Orchid is the colour so nearly black. As seen through a lens, it is very deep purple brown. The sepals and petals are nearly of the same size: they are oblong, shortly pointed, and slightly hollowed. Each is about 1 inch long, and a little more than ½ inch broad. The triangular lip also is flat, with a cordate base just below the column, and a little above the blunt apex there are two small callouses: the disc is slightly hollowed, and the border minutely denticulate. A very striking character of botanical value is the shortness of the two bristles of the column, scarcely exceeding one line in length, and so converging that they seem coherent at the ends. The plant is polliniferous, and the pollinia are thrown from the anther-bed at the slightest touch of the bristles. *Fr. Kranzlin.*

* *MORMODES WOLTERIANA*, KRANZL., N. SP.—*Racemus* ad 10-flores, 12 cm. longus, rhachis viridis, bracteae parvae, triangulae, tenerae, fere 1 cm. longae; pedicelli ovariaque virides, ad 4 cm. longi, ovaria 6 sulcata. Sepala petalaeque paululum longiora, ovato-lanceolata, acuminata, margine revoluta, 3.3 v. 3.5 cm. longa, sepala basi 1 cm., petala 8 mm. lata, omnia unicoloria aurantiaco-brunnea, extus pallidiora. Labellum toto ambitu e basi cuneata v. brevi-unguiculata rhombeum, sub anthesi involutum, trilobum, lobi laterales quam intermedius breviores, trianguli, acuti, v. intermedius acuminatus, discus medio obtuse carinatus, sparsissime pilosus; labellum florum inferiorum (6) ad 3 cm. longum, inter lobos laterales 2 cm. latum, satis firmum eodem colore quo sepala petalaeque, illud florum superiorum 1.8 cm. longum, vix 1.5 cm. latum, vitellinum, magis curvatum, multoque tenerius, gynostemium plerumque sinistrorsum curvatum, dense velutinum. Flores inodori. Peruvia.—Imp. P. Wolter, Magdeburg. *Fr. Kranzlin.*

† *CATASETUM TENEBROSUM*, KRANZL., N. SP.—*Racemus* strictus pauciflorus (in specimine meo 6-flores). Rhachis viridis, sordide purpurea, bracteae parvae, ovatae, acutae, virides, 1 cm. longae, ovaria cum pedicellis multo longiora, 2.5-3 cm. longa, atro-purpurea. Flores ringentes, patentissimi, sepala latissime oblonga, acuta, concava. Petala elliptica paulum angustiora, plana, apice subreflexa, omnia 2.5 cm. longa, 1.5 cm. lata, petala 1.2 cm. lata, adeo fusca, quod primo aspectu atra apparent. Labellum planum, toto ambitu cordatum, viride, apice crasso carnosum, obtusissimo callosio, basi callo transverso plano atoque callo luteo instructum, margine praesertim basin versus minute denticulatum, 2 cm. longum & basin versus 2.2 cm. latum, discus labellum leviter excavatus. Cirrhigynostemium perbreves, filiformes, antice convergentes, ut sese turgent (est enim planta pollinifera). Flores 4 ad 4.5 cm. diam. Floret in Europa aestate. Peruvia.—Imp. P. Wolter, Magdeburg. *Fr. Kranzlin.*

COLONIAL NOTES.

FRUITING OF OROXYLUM INDICUM.

DURING a hurried visit to Trinidad in the last week of December, 1909, in the Queen's Park ("The Savannah"), I was attracted to a tree of *Oroxylum indicum*—small and puny in stature, and known to me for the past two decades—by the quantity of big, pod-like fruits it bore, in number and size quite out of proportion to that of the tree itself. I counted 36 fruits, but this did not include the entire crop. The tree was in a leafless state, and exposed to sunshine and high winds.

FRUITING OF ROUPELLIA GRATA.

A PLANT of this West Tropical African species was in full flower at the Tobago Botanic Station last December. When in Trinidad, at the end of the same month, I noticed objects resembling a large pair of bull's horns, attached to a climbing plant trained to an exposed fence at the St. Clair Experiment Station, and, upon closer inspection, I found it to be the fruits of this *Roupellia*. For the past 22 years I have been accustomed to see it flower each year in Grenada and Trinidad, but this is the first time I have noticed it in fruit. *W. E. Broadway.*

The Week's Work.

FRUITS UNDER GLASS.

By B. GOODACRE, Gardener to Sir ERNEST CASSEL, G.C.B., Moulton Paddocks, Newmarket.

Orchard House.—Plum trees in pots carrying late crops of ripening fruit require very careful attention. Liquid manure may be dispensed with, and in its place applications of clear water may be given as often as necessary. A fairly dry, buoyant atmosphere should be maintained, using a little fire heat during cool, damp weather, to cause the air to circulate. Allow each tree plenty of space and full exposure to the sunshine. As the fruit approaches maturity the supply of water to the roots may be lessened, giving merely sufficient to maintain the tree in a healthy condition.

Fig trees in pots.—Trees now yielding ripe fruits require a fairly high temperature in order to induce them to provide a moderate supply until the end of October. Maintain a temperature of 60° to 65° at night, with a proportionate increase during the day. Keep the roots well supplied with moisture, applying liquid manure alternately with clear water. Syringe the trees on fine days only, at other times a moist atmosphere must be maintained by damping the paths, and walls several times each day. Admit air early in the day when the weather is favourable, closing the house with a little sun heat on bright days. Endeavour to change the air inside the house every day. On dull, cold days the top ventilators may be opened slightly for about one hour during the middle of the day, using a little extra fire heat, if this is necessary, to maintain the requisite heat. Pinch the young growths to two or three leaves in order to encourage the fruits to swell. Insect pests are most likely to put in an appearance during dull, cold weather when considerable fire heat is employed. The most effective remedy is sponging with warm soapy water. Trees from which the fruit has been gathered need to be hardened off carefully before placing them out of doors, otherwise the sudden change in temperature may injure them.

Fig trees in borders.—Trees which have produced a second crop may now be fully exposed to the weather. Old-established trees will still derive some benefit from liquid manure, which will tend to strengthen the young wood for fruiting next season. If the growth is at all crowded, it will be advisable to thin out any shoots which will not be required for fruiting next season.

Early Fig house.—The wood being now fairly well matured, any necessary treatment the roots may require may be taken in hand at once, so that the border will become settled again before forcing takes place. Young trees or those which are inclined to make rank growth may be lifted and root-pruned, adding a good dressing of lime rubble to the soil during the process of replanting.

THE FLOWER GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Hertfordshire.

Border Carnations.—The shoots of border Carnations, which were layered as advised in a previous Calendar, should now be well rooted, and ready for removal from the parent plants. They may either be potted up or planted in the permanent positions they will occupy next season. The former method is to be recommended in districts where the soil is of a wet, cold nature, and where a cold frame from which wet can be excluded is available. Pots 3 inches in diameter are the most suitable, and the compost should consist of good loam, with a little leaf mould and a sprinkling of finely-sifted old mortar rubble. Sever the newly-rooted plants with a sharp knife and lift them with a hand fork, taking care not to damage the roots more than can be helped. Pot them firmly in clean, well-drained pots, place the pots closely together,

tances of 15 inches, allowing 18 inches between the rows. Place a layer of finely-sifted cinder ashes round each plant, and lightly dust them with soot in showery weather as a preventive of slugs.

General work.—At this time of the year every effort is needed to preserve the flower garden in a tidy condition. With the first touch of frost much clearing must be done. Where it is customary to grow such bulbs as Tulips and Narcissus in open breaks in the garden, the ground should be got in readiness for planting within the next few weeks. Dig the ground thoroughly well and work in a dressing of farmyard manure, allowing the surface to remain rough until a favourable opportunity presents itself for preparing a fine tilth. If planted in drills in this manner, the various sections and varieties of Tulips make a fine blaze of colour, and they supply blooms for cutting. Where Agaves, Bays, and other plants of a tender

handsome, flowering shrub, and one which has a somewhat exotic appearance, although it is hardy. The Lespedezas are elegant late-flowering shrubs, with their clusters of Pea shaped flowers.

PLANTS UNDER GLASS.

By JOHN DONOGHUE, Gardener to JOSEPH PICKERSGILL, Esq., Bardon Hill, Westwood, Yorkshire.

Chrysanthemum.—These Chrysanthemum plants which are cultivated for providing blooms for exhibition purposes should be removed into light, well-ventilated structures, it being unwise to allow them to remain out-of-doors any longer. The houses should be thoroughly cleansed, and, in cases where this is practicable, a coal-ash base should be provided for the pots, this being a good preventive of damping in the florets. Let the plants be examined thoroughly, syringing them with a mild insecticide, and washing



FIG. 92.—PIGMY TREES SHOWN BY THE YOKOHAMA NURSERY COMPANY AT THE JAPAN-BRITISH EXHIBITION.

(See p. 228.)

and apply a good watering by means of a can with a fine rose. Keep the plants close for a time, and spray them lightly in favourable weather. When they have recovered from the shift, air must be admitted, and the lights may be removed in good weather. The plants should be examined occasionally, carefully removing any yellow foliage, and taking over the base of finely-sifted cinder ashes to keep the frame sweet. Where it is intended to plant them out at this season, the ground should be dug well, and a liberal quantity of decayed farmyard manure applied, and, if the natural soil is deficient in lime, some old mortar rubble may be worked in rather deeply. Choose a favourable time for the work, and make the ground firm before planting. Put the plants in lines at dis-

nature are employed on the terrace walks, and other positions, these must be removed to their winter quarters, and on the first suitable occasion be given a good sponging with an effective insecticide. The present season has been unfavourable for the flowering of such plants as Datura, Hydrangea, Plumbago, Gerbera, and many others that may be plunged during the summer months in various positions, and be relied upon to flower well in good seasons. Continue to spray the foliage of any plants that may be affected with mildew.

Shrubs in flower.—At this season of the year few shrubs make a finer effect than Hydrangea paniculata, therefore it is especially useful for massing in large beds in the woodland or wild garden. Clerodendron trichotomum is another

the pots before removing them to the houses. Arrange the plants so that the flowers will be near to the glass, and allow every specimen sufficient room to prevent overcrowding. They will need to be examined every morning for the purpose of watering only those which are dry, and measures should be taken to get the stages and floors dry again before evening. When the florets begin to show colour, extra care will be needed to prevent draughts of cold air, whilst, at the same time, employing ventilation to keep the house in a sweet condition. Greater trouble in regard to damping is always experienced with plants which have been fed excessively with manures, especially if the feeding has been continued in the later stages of bud-development. Each bud should be securely tied to a

[Photograph by John Gregory.]

stake, which should be just long enough to reach to the underside of the bud. In the case of incurved varieties, it occasionally happens that the flowers appear overcrowded with florets, and it is beneficial to remove a few short florets from the centre of such flowers; but this is a delicate operation, and it can only be carried out properly by a man who has considerable experience. A little warmth in the water pipes is useful during damp and foggy weather. Occasional fumigations with a Nicotine compound should be practised, remembering that if aphides once get amongst the florets in the blooms it will be very difficult to eradicate them.

Decorative Chrysanthemums.—Plants which are cultivated for decorative purposes, or for supplying the market with cut blooms, will be the better for remaining out-of-doors as long as the weather continues favourable. In order to preserve them against damage by winds, each shoot must be secured to a stake. The roots may be given occasional top-dressings with a chemical fertiliser. For most purposes of decoration, Chrysanthemums are more effective in natural sprays, but if the blooms are wanted of larger size, disbudding must be practised as soon as the buds are large enough, leaving the best bud at the top of each shoot. Single varieties are specially effective in natural sprays, and their beauty is marred by thinning.

Lachenalia.—The bulbs of Lachenalias are now fully matured, and they may be repotted as circumstances permit. Lachenalias are especially adapted for cultivation in baskets, and they afford charming displays of yellow and orange colours, if the bulbs are planted at distances of 2 inches throughout the baskets. Another way of cultivating them is to put about half-a-dozen bulbs into a 5-inch pot, or shallow pans, measuring from 6 to 8 inches across, will accommodate a dozen bulbs each.

Narcissi.—These bulbs, being now procurable, may be potted or placed into shallow boxes. Certain varieties are very suitable for early forcing, including *Telamonius plenus*, *Emperor*, *Horsfieldii*, and *Golden Spur*. Among the newer varieties, *Glow of Leyden* is one of the best. Like most bulbs intended for indoor culture, they should be plunged into sand or coal ashes until the bulbs form a number of roots. We usually plunge them on the space occupied during the summer months with Chrysanthemums. This position is exposed to severe frost, which is a benefit to bulbs that have to be forced.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Bedford, Surrey.

Cattleya, Pleione, &c.—Plants of *Cattleya Trianae*, *C. Mendelii*, *C. Warneri*, *C. labiata*, *C. Bowringiana*, *C. Harrisoniae*, *C. Loddigesii*, also many late autumn and winter-flowering hybrids, having finished growing, will now need but little water at the root. The object of the grower should be to do all that is possible to induce these new-growths to mature, and this may be done best by placing such plants at one end of the house, so that they may not be damped nearly so much between the pots as during the growing season, nor the blinds drawn over them, where there is stippling on the roof-glass. Where this stippling has been put on rather thickly, and has worn off but little, a good plan is to take a soft hand-brush and draw it very lightly over the glass, when it is quite dry, so as to leave on just sufficient only to soften the bright rays of direct sunshine. Afterwards see that all the dust is cleaned out of the roof gutters. It frequently happens at this time of the year in houses that are situated in low and enclosed positions, and which are insufficiently ventilated, that the thin, papery sheaths encircling the new pseudo-bulbs become almost transparent, and appear to have moisture behind them; this has often been the means of causing the bulb to decay. When this is first seen, it is advisable to keep the plants extra dry at the root for a few days, and also to see that the atmospheric moisture is lessened; but if under such treatment these damp-looking bracts or sheaths do not dry quickly, it is advisable to slit the sheath from top to bottom, and so let the moisture escape. If, on opening the sheath, it is found that the pseudo-bulb has already commenced to turn black, the affected part should be cut off, or the whole plant may be affected;

but if only a small part of the bulb is diseased, the decayed portion should be carefully removed with a sharp knife, and, by filling the cavity with dry, slacked lime, further injury may often be prevented. Such plants as *C. Mossiae*, *C. crispata*, *C. Lawrenceana*, *C. lobata*, *Laelia purpurata*, and *L. tenebrosa*, that are now making their new growths should be kept supplied with water at the root. Owing to the increased ventilation in fine weather, and the additional light through the roof-glass, the plants will appear to dry quickly, but they must not be watered again till the whole of the compost has become properly dry. The new pseudo-bulbs of plants of *Laelia elegans* that have finished flowering are apt to decay if there is too much water at the root, and too little sunlight and ventilation. This fine old species will soon produce roots from the flowering growths. Any repotting may be attended to before these appear.

Pleione.—Suspended from the roof in a light position are the *Pleiones*, and such species as *P. maculata*, *P. lagenaria*, *P. Wallichii*, and *P. precox* have nearly completed their pseudo-bulbs. They should be well exposed to the light, and as soon as the leaves commence to turn yellow the supply of water must be lessened, the soil being kept just moist, so as to encourage the flowering growths. Immediately the foliage has fallen off the flower-buds will appear, and as the flowers commence to open, the compost should be kept comparatively dry, otherwise the delicate blooms soon lose their colour, become spotted, and damp off. These Orchids are very pretty for room decoration, and last longer there than when left in the moist Orchid houses; the drier air or deficient light does not affect them. The short rest in the dwelling-house is generally beneficial.

Butterfly Orchids.—The butterfly Orchids, *Oncidium Papilio* and *O. P. Kramerianum*, when grown in a light, airy position with the *Cattleyas*, thrive very well, and, if planted in shallow pans, suspended well up to the roof-glass, and with a thin layer of *Osmunda* fibre to root in, they make good bulbs and strong flowering stems. From the time these plants start into growth and till the flower-spikes are cut they need abundance of water at the root, but, while at rest, very little will suffice to keep them plump. At the present time these species are in bloom, and the flower stems will continue to produce flowers for a long period. As each flower fades, another bud takes its place; but, for the future welfare of the plant, it is advisable to remove the spikes after they have produced four or five flowers.

Chysis.—*C. aurea*, *C. bracteescens*, *C. Limminghii*, *C. Chelsonii*, *C. Sedenii*, and *C. laevis* should be suspended at the warmer end of the *Cattleya* house, or in the warmer division or plant stove, so as to enable the growths to finish quickly, and until these are completed and the leaves commence to change colour the plants will require plenty of root-moisture. When well matured, they should be placed with the *Dendrobiums* in the resting house; they will need but very little water during winter.

THE HARDY FRUIT GARDEN.

By A. R. SEARLE, Gardener to the Marquis of Northampton, Castle Ashby, Northamptonshire.

Root-pruning.—The time will soon arrive when this operation should be carried out, therefore, in gardens where root-pruning or lifting of trees has been decided upon, the necessary soil should be got in readiness. In most cases, a good loam is required in the largest quantity, but the operator must take into consideration the nature of the soil he has to deal with in order that he may supply anything that may be deficient. It may be necessary to add lime rubble, wood ashes, burnt soil, or other materials, but whatever is required, it should be got ready before the operation is commenced, so that it may proceed without any check. Root-pruning is practised for the purpose of restricting a tree's growth and thus increasing its fruitfulness. In the case of young trees, it is better to lift them entirely and replace the roots near to the surface. It is the larger trees which are consistently unproductive that should be root-pruned. When it is desired to lift a tree, commence by taking out a trench 2½ feet to 3 feet deep, at a reasonable distance from the stem which may vary from 2 feet to 3 feet, according to the size of the trees. Should the old soil be unsuitable,

remove as much of it as possible, and supply in its place good loam, laying out the roots carefully and evenly, and removing damaged roots by making clean cuts with a sharp knife. Make the soil quite firm by treading it as the work proceeds. In the root-pruning of large trees, a trench should be taken out at a suitable distance from the stem, and about 3 feet to 4 feet deep, carefully forking out the soil from under the roots, severing all those roots which are growing in a downward direction, and shortening all long, straggling roots. Where very large trees need root-pruning, it is better to prune half the roots one year and the remainder the next season. This will not cause such a severe check to the trees as it would if done all at one time. All fibrous roots should be preserved carefully and brought as near to the surface as possible. Tread the soil firmly, and finish off the work neatly. When the operation is completed, apply a copious watering to the roots to settle the soil, and syringe the trees regularly until the leaves fall. Both the lifting and root-pruning of trees may be commenced in October, or even earlier, provided the trees are not bearing fruits.

THE KITCHEN GARDEN.

By JOHN DUNN, Kitchen Garden Foreman, Royal Gardens, Windsor.

Herbs for winter.—If a supply of green herbs is required in the winter, the best way is to set apart for them a portion of a pit where fire heat can be applied during cold weather. The Mint which was cut down a month ago, in preparation for forcing, should now be taken up very carefully, shaking all the soil from the roots. The roots should then be placed in a layer of fine soil over a very mild hot-bed of leaves. When the roots are in position the whole may be covered to the depth of 2 inches with finely-sifted leaf mould, which should be washed well among the roots with clear water applied at a temperature of 70°. Young shoots will soon begin to push forth, when sufficient air should be given to keep them from becoming drawn. The best roots for forcing are those produced from cuttings each year, being stronger than older plants. Chives may be grown in the same pit; on a gentle hotbed they will soon make fresh growth and continue to do so for some time, but further batches of roots may be placed in the bed as required throughout the winter. Tarragon should be cut over, and placed in the pit without delay. This herb forces easily, and a supply may be had through the winter by placing a few clumps in moderate heat from time to time. Sweet Basil requires rather more heat, and should be grown in pots placed on a shelf near the glass in an atmospheric temperature of 65°. The soil for Sweet Basil should be composed of loam and peat in equal quantities, adding a sprinkling of rough sand. Sweet Marjoram may be kept in a cold frame until the approach of frost, but must then be moved to a pit in which a temperature of 40° can be maintained; air should be admitted freely. Chervil may be sown at the foot of a south wall in order to furnish green leaves as far into the winter as possible, and the latest sowing may be made in a cold pit at the same time, for furnishing a supply in severe weather.

Beet.—Beetroots should be lifted and stored away in some dry, frost-proof shed. Great care should be taken not to break the skin or injure the roots in any way, or the quality of the roots when cooked will not be satisfactory. Dry sand should be mixed freely amongst them to keep the roots in a crisp state.

Carrots.—These may be lifted and stored in the same way as Beet. Avoid placing large quantities together, or they may become heated and of no value. Carrots sown a month ago to stand the winter for pulling in March should be thinned to 3 inches apart. Young Carrots from this sowing will be much appreciated in March when the supply of old roots is nearly exhausted. Apply frequent dustings of soot during the autumn to encourage a free growth.

Potatoes.—Proceed with the lifting and storing of late Potatoes in dry weather, placing the tubers under cover in some dark place until their final sorting takes place, when they may be placed in neat clamps and covered with 4 inches of straw and 9 inches of soil. The latest batch will keep in better condition in clamps than in sheds, provided sufficient covering is available for their protection during severe frosts.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Special Notice to Correspondents.—The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

Letters for Publication, as well as specimens of plants for naming, should be addressed to the EDITORS, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, and as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Local News.—Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Illustrations. The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c., but they cannot be responsible for loss or injury.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editors to see.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, SEPTEMBER 27—

Roy. Hort. Soc. Coms. meet. (Lecture at 3 p.m. by Mr. Arthur W. Hill, M.A., on "South America in its Relations to Horticulture.")

WEDNESDAY, SEPTEMBER 28—

Nat. Vegetable Soc. Exh. at Roy. Hort. Soc. Hall, Westminster.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich 54.8°.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, September 27 (6 p.m.): Max. 62°; Min. 43°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, September 22 (10 a.m.): Bar. 30.4; Temp. 58°; Weather—Sunshine.

PROVINCES. Wednesday, September 27: Max. 57° Cambridge; Min. 53° Yorkshire.

SALES FOR THE ENSUING WEEK.

MONDAY, TUESDAY, WEDNESDAY, THURSDAY, AND FRIDAY—

Dutch Bulbs, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.

THURSDAY AND FRIDAY

Second and final portion of the "Clifton Hall" Collection of Orchids, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 1.

Many plants are treated in gardens as annuals, which, strictly speaking, are biennials or even perennials. In such a category may be placed Antirrhinums, Pentstemons and Verbenas. Thus it is that judges at flower shows are sometimes placed in a difficulty through some of these doubtful kinds appearing in collections of annuals. The safest plan in such cases is to follow the rule laid down by the Royal Horticultural Society, which reads as follows:—"In this country those plants are to be considered 'annuals' which, naturally and ordinarily, begin and end their growth, ripen seed and die (irrespective of frost) within 12 months."

The difficulty of distinguishing strictly between annuals and biennials is so great, however, that it would be better not to attempt to separate them at competitive shows, but establish classes to include both. Until such is the case, judges must interpret the wording of the schedules literally, and disqualifications, which are always to be regretted, may be expected to happen occasionally. Our remarks in this article concern not only true hardy and half-hardy annuals, but also several plants which are treated as if they were annuals, although they are capable of living for a longer period than a year.

The most popular annual of the day is the Sweet Pea, but as we referred to the plant at

some considerable length in a recent issue, it may be passed without further comment on the present occasion.

About 30 years ago a break was discovered in the common Candytuft, and the novelty was distributed under various names, of which "New White Spiral" was one. It is still an inconstant variety, but the best strains produce something like 75 per cent. of plants which have the Hyacinth-flowered spikes. It is remarkable that this improved form of inflorescence has not yet been associated with any other colour in Candytuft! "Rose Cardinal," of a colour indicated by the name, is certainly a very distinct variety. It received the A.M. of the Royal Horticultural Society in 1901.

Mignonette has been improved much in recent years, and the best market types are far superior to the old, large-flowering varieties. The chief advance in regard to Poppies is found in the Shirley strain distributed by the Rev. W. Wilks. It is worthy of note that efforts which have been made to select the different colours of Shirley Poppies have met with considerable success. One wholesale house offers seeds of 16 different colours. American growers promise an improved strain of Shirley Poppies, but the varieties we have at present are so beautiful it is difficult to conceive any improvement upon them. In double Poppies the Improved Cardinal strain is excellent. From time to time Poppies from Continental sources are introduced as novelties, but they seldom meet with much appreciation.

Nemesia strumosa is an excellent addition to the half-hardy annuals, and since its introduction the strains have been improved much in habit by the introducers and others.

In Eschscholtzias, the selections of "erecta compacta" are great improvements on the old, loose-habited varieties, and there are now new rose and carmine shades, which are very beautiful.

Godetias and Clarkias have shown considerable improvement, especially Godetias, and the double-flowered type known as Godetia Schaminii introduced some years ago from the Continent is a beautiful plant when well grown.

Marigolds are not universal favourites, though they are admired by many, and very fine strains of both the African and French types are obtainable, whilst the dwarf "Legion of Honour" is very useful in some bedding designs. The so-called Scotch Marigolds or Calendula have been shown well before the Royal Horticultural Society during the past summer, an Award of Merit being made to them. Centaureas may be classed amongst the most beautiful annuals, particularly the new selections known as "The Bride" and "Bridegroom." They are not so widely grown as they deserve.

The varieties of Cosmos, now that they can be got into bloom in July, have a great future before them. "Rose Queen," which was certificated recently by the Royal Horticultural Society, and "White Queen" are excellent types of this flower.

The Scabious is receiving considerable attention at the hands of some firms, and one strain has the distinction of having received a First-Class Certificate from the Royal Horticultural Society.

Antirrhinums are treated as annuals very

successfully by many cultivators, and this fact justifies our reference to them here. Those who have never seen a representative collection of Antirrhinums can hardly imagine the great range of colour and beauty the flowers exhibit. Some grow tall, others are of medium height, whilst several strains are quite dwarf. The colours range from the deepest crimson to white, and include nearly all shades of red, rose, pink, bronze, scarlet, yellow, and many charming combinations of these colours. Efforts are continually being made to associate the large, wide-mouthed type of flower with all the different colours.

Nasturtiums receive greater attention in America than in Britain, the reason being that the drier climate of the States is more conducive to flowering. In a season exceptionally dry and hot, Nasturtiums make a grand display in Britain, but in a wet one they have far too much foliage, whilst the display of flowers is comparatively meagre. Attention has been given in recent years, in this country and America, to raising varieties of both dwarf and tall Nasturtiums with variegated foliage, and some of the selections have met with appreciation, although, for our own part, we do not favour them.

In annual Chrysanthemums, some improvements have been obtained. It is desirable that cross breeders should select the single-flowered "Morning Star" type as a parent for their seedlings. The new selection known as inodorum "Snowball" is a commendable one, but the foot-stalks are not of sufficient length or strength.

Schizanthus Wisetonensis makes a graceful and beautiful pot plant, and its cultivation has quickly spread over all the country. Great improvement has also been made in Schizanthus grandiflorus.

Development is being carried on in Asters, Stocks, Phlox Drummondii, Larkspurs, and Zinnias by Continental seed growers. An early white Aster, introduced by an English firm a few years ago under the name of "Early Wonder," has achieved considerable popularity. Petunias and Salpiglossis are both worthy of more attention from cross-breeders than they receive. One of the most interesting and useful annuals which have come into public appreciation in the last few years is Kochia trichophylla, a graceful plant grown entirely for its beautiful foliage.

Dimorphotheca aurantiaca received an Award of Merit from the Royal Horticultural Society at the Temple Show in 1908. The colour is the richest orange, and its effect in sunshine is most dazzling. Its culture is easy, but seed, we understand, is not yet plentiful.

It is a satisfactory circumstance that gardeners are beginning to recognize that annuals must be cultivated very differently from the old-fashioned way. There is no better illustration than the modern method of Sweet Pea culture. Let cultivators once learn that most kinds of annuals will repay such careful and spacious culture as is now bestowed on Sweet Peas, and annuals will become increasingly popular. A few seeds sown thinly and transplanted carefully is no doubt the way to succeed, except with a few kinds, of which the Poppy is the best example. The Poppy and certain other annuals must be sown in the positions in which they will flower, and the plants must be thinned accordingly, because they cannot be transplanted

successfully. An excellent illustration of the correct way to grow annuals is the method adopted by the best growers of Mignonette. Two, three or four seeds are sown in small pots; they are raised in the greenhouse or frame until the seedlings are about 4 inches high, when they are hardened and planted out. In this way much better results can be obtained from a packet of 100 seeds than from 10 times that number, if sown in the old style and the plants are allowed to grow too closely together.

It should be remembered by those who attempt to further improve annuals that it is necessary they should select from single plants. In the case of those species which can be propagated from cuttings, the best method is to cut back the special plant and instead of allowing it to seed, propagate all the cuttings which can be obtained. In the following season a small isolated bed should be planted with the true stock and seed saved exclusively from the plants so cultivated.

Emodi, grasses, including Phalaris, and Sedges. The confines are formed of shrubberies, with a semi-wild display of flowering plants, Impatiens Royali figuring largely. The lawns are broken up irregularly into small areas, each providing some new feature of interest. At one spot is a Bamboo garden, which contains several fine specimens, but some of the finest of these flowered about four years since and afterwards died, as is usual. Dotted about the grass are Yuccas, Cordylines, hardy Palms, Agapanthus umbellatus, Eucalyptus cordata, Magnolias, Wistarias, and several large plants of Aralia cachemirica, the last being finely in flower. Stone lanterns are placed at appropriate spots, and, many of the plants being Japanese species, this part is known as the Japanese garden; the whole embraces about an acre. Notwithstanding the smoky atmosphere, the plants thrive abundantly. Readers will be glad to learn that the head gardener, Mr. DIXON, is recovering from his recent indisposition.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Committees of this Society will

Exhibiting Japanese and Incurved Chrysanthemums," by Mr. H. J. JONES; (b) "The Use of Large Blooms in Floral Decoration," by Mr. R. F. FELTON. 7.30 p.m.: Paper by Mr. STEVENSON, entitled, "Late-struck Japanese Chrysanthemums for Exhibition."

HORTICULTURAL EDUCATION ASSOCIATION.

—The fifth annual outing of the members of this association took place on the 15th and 16th inst., the *Times* Experimental Station being visited on the first, and the R.H.S. Gardens at Wisley on the second day. There were 19 members present (see fig. 93). Mr. FOSTER was the guide at Sutton Green, and he afterwards conducted the visitors to the delightful grounds and gardens of Sutton Place. At Wisley, Mr. CHITTENDEN and Mr. S. T. WRIGHT were the conductors, and they made the brief time at command pass pleasantly and instructively. On the evening of the first day the annual dinner took place at Woking. Mr. WALTER P. WRIGHT, the secretary, taking the chair. The subsequent proceedings resolved themselves into a general debate on subjects in which



FIG. 93.—HORTICULTURAL EDUCATION ASSOCIATION.

Back row (reading from left to right), C. Martin, G. H. Hollingworth, Horace J. Wright, C. Wakely, F. G. Drew, A. E. Burgess, W. H. Neild, W. B. Little, J. Slack, C. Berry, J. G. Murray, L. R. Harvey, I. Stoney, E. C. Parslow.

Front row—J. Little, W. P. Wright, C. Foster, F. J. Chittenden, and J. C. Newsham.

OUR SUPPLEMENTARY ILLUSTRATION affords a view in the pleasure gardens at Holland House, Kensington, the residence of MARY Countess of ILCHESTER. These beautiful grounds embrace about 75 acres. Visitors to the summer exhibitions of the Royal Horticultural Society, which have been held for several years in the park attached to Holland House, have had opportunities of inspecting the private gardens and lawns, and many readers will be familiar with the scene shown in the illustration. In the foreground may be seen a water-basin, which forms one of a series of seven at different levels, the ground sloping considerably. They are fed by a stream, which flows from a rockery, and are planted with Nymphæas and other aquatic plants. In one we observed several large clumps of *Pontederia cordata*, which is unharmed in mild winters. There are stepping stones in the water, and in one case the pond is spanned by a bridge, the sides of which are hidden by luxuriant growths of *Roses*, *Ampelopsis*, *Ipomœa*, and *Polygonum Baldschianicum*. The sides of the tiny lakes are bordered with flowering plants, including *Irises*, *Spiræa*, *Aruncus*, *Kniphofias*, *Liliums*, *Sedum Sieboldii*, *Salvias*, *Heucheras*, *Campanulas*, and other species. There are also clumps of *Podophyllum*

take place on September 27. At the 3 o'clock meeting of Fellows a lecture on "South America in its Relations to Horticulture" will be delivered by Mr. A. W. HILL, M.A.

THE NATIONAL VEGETABLE SOCIETY.

Readers are reminded that the first exhibition of the National Vegetable Society will take place on Wednesday next, at the Royal Horticultural Hall, Vincent Square, Westminster. The event promises to be a very great success. Mr. GEORGE MONRO, V.M.H., who is giving the Society his warm support, will preside at the judges' luncheon. We hope that the exhibition will attract a large company of visitors.

NATIONAL CHRYSANTHEMUM SOCIETY.

—The following is the draft programme for the Conference on Chrysanthemums which is to be held on December 5 next:—Afternoon session, 3 p.m.: Paper by Mr. NORMAN DAVIS, entitled, "The Culture of Japanese Chrysanthemums for Exhibition." 4 p.m.: Paper by Mr. W. HIGGS, entitled, "The Culture of Incurved Chrysanthemums for Exhibition." Evening session, 6.30 p.m.: Two short papers, viz.: (a) "Methods of

the members are interested. The officers for the ensuing year are Mr. F. J. CHITTENDEN (chairman) and Mr. W. P. WRIGHT (secretary). So little is heard of this association that it may be necessary to explain that the members include county instructors in horticulture and others.

NATIONAL HARDY PLANT SOCIETY.

—We are informed that a meeting of persons interested in hardy plants was held recently in Edinburgh, Mr. MACSELF, the Chairman, explained the objects of the Society, and invited the meeting to express an opinion as to the desirability of including annuals within the scope of the Society. The meeting decided that it was not desirable to include annuals. A discussion then took place as to the amount of the subscription. The chairman thanked the meeting for their expressions of opinion, stating that it would be of great assistance to the Provisional Committee in framing the constitution of the Society. Mr. BOUSKELL and Mr. BRUNTON also addressed the meeting. The following gentlemen were elected members of the Provisional Committee:—Mr. M. TODD, Mr. BRYDON, Dr. MACWATT, and Mr. KIDD to represent Scotland.

SOCIÉTÉ FRANÇAISE D'HORTICULTURE DE LONDRES.—We have to record the publication of the annual *Bulletin* of this Society. For 21 years the French Horticultural Society of London has been doing a valuable work. Its genial president, Mr. GEO. SCHNEIDER, and his colleagues may well feel proud at the result of their long continued efforts, and the *Bulletin* before us is ample testimony of the successful progress the Society has made. It has 700 members spread over all parts of the world. Its honorary president is M. PHILIPPE DE VILMORIN. The finances show a substantial balance in hand, due entirely to the able manner in which the Society has been managed, for the French Horticultural Society of London has never received a subsidy from the French Government. The contents of this year's issue may be briefly summarised as follows:—The frontispiece is a portrait of Sir ALBERT KAYE ROLLER, who presided at the annual meeting last year. The portrait is accompanied by an appreciative biographical notice. The rules, list of members, library catalogue, balance-sheet, and the reports of monthly meetings all appear as usual. There is a full report of the annual dinner held last January at the Café Royal, when M. LAURENCE DE LALAND, the French Consul-General, occupied the chair. Several of the principal speeches on that occasion are now published. One of the practical results of the monthly meetings is the reading of papers on horticultural subjects by the members, and some of these are printed in the *Bulletin*. The subjects include horticultural instruction in Belgium, Ericas in Germany, the Temple Show, the Cyclamen, the Croton and its culture, and Fern culture in England. To those members who have returned to France, or who have taken a position in some of the far-distant parts of the world, this annual publication must be very welcome, reminding them of pleasant hours spent in this country and bearing evidence of the continued prosperity of the Society. Mr. GEO. SCHNEIDER, 17, Ifield Road, Fulham Road, S.W., will be glad to furnish particulars of the Society to those desiring them.

WILD FLOWERS IN THE CITY OF LONDON.—We are informed that the Selborne Society has been investigating an interesting building site in Farringdon Street. Although this plot has only been cleared for about two years, no fewer than 28 species of flowering plants and Ferns have established themselves upon it. Mosses, Liverworts and others of the more lowly plants are also represented. Mr. J. C. SHENSTONE is preparing a detailed list, which will be published in the October number of the *Selborne Magazine*.

THE SCENT OF ROSES.—Considerable notice has been taken in Scotland of some remarks made by the Countess of WEMYSS on the occasion of the opening of the annual show of the East Lothian Horticultural Society at Haddington, on September 9. The Countess offers a prize every year for the sweetest-scented Rose. In her opening address she referred to the subject, saying that she understood that some people laughed at her for offering this prize, thinking it must be difficult to distinguish the best among so many. After referring to the expression of Shakespeare "that which we call a Rose by any other name would smell as sweet," she said that the Rose Frau Karl Druschki had no scent at all, and therefore the Rose of this particular name did not smell sweet. She considered that the quality of scent was by far the highest attribute a Rose could possess, for a Rose was nothing to her if it did not possess perfume.

WEED-KILLER SWALLOWED IN MISTAKE FOR TEA.—According to the *Pharmaceutical Journal*, GEORGE A. KEEYES, a man in the employ of the Richmond Corporation, died on September 12 from the effects of poison taken whilst following his employment. KEEYES, who had been on the gardening staff of the Corporation for a number of years, left home for work as usual on the morning of September 12, and went to Kew Green, where he and others were to be engaged during the day. It was his custom to take a bottle of tea for breakfast, and at eight o'clock the men gathered together in a small shelter on the Green to have their usual meal. They were laughing and talking as usual, when KEEYES, who had placed his bottle of tea down by his side, had a drink, and almost immediately exclaimed to his stepson, who was one of the party, "I've been and took poison." By the time a doctor had arrived, there was no doubt that the man was in a serious condition, and he was taken to the Richmond Hospital. It appears that KEEYES had placed his bottle of tea close to a bottle of similar size and shape containing weed-killer. The man died late the same night.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

CHRYSANTHEMUM ALICE M. LOVE AND THE RUST FUNGUS.—Little is heard of the Chrysanthemum rust nowadays, not necessarily because it is any less troublesome than formerly, but because there is nothing new to be said or done in connection with it. I would point out, however, that the old variety Alice M. Love seems to be quite immune from this disease. I have seen it grown in the midst of thousands of other plants, most of them affected with the disease, and there has never appeared a speck of rust on Alice M. Love. So far as I know, this is the only variety which is immune from the pest, and that without any artificial remedies. It has, therefore, occurred to me that it might be worth while trying to discover the reason by making a comparative chemical analysis of the leaves or sap of this sort and those of other varieties. Thereby a valuable clue to a remedy might be discovered, for that there is some peculiar (so far as the Chrysanthemum is concerned) chemical constituent in the variety Alice M. Love seems evident. The physical texture of the leaves is softer and more delicate than ordinarily, and one would naturally expect the rust-spores to find an easy footing. There is also a peculiar appearance in the veins which frequently show a light yellow colour. F. C. S.

PERPETUAL-FLOWERING CARNATIONS IN THE NORTH.—Some growers advise growing perpetual-flowering Carnations in frames during the summer, but I find that the weather is so treacherous in the North of England that the safest plan is to grow them in the houses at every season of the year, with the exception that some are planted out to provide stock plants from which cuttings are taken. My method here is to plant out some old plants in June. In September, cuttings are taken from these, in preference to those grown inside. They root readily in an intermediate house. I usually get a box about 9 inches in depth, half fill it with leaf-soil passed through a $\frac{1}{2}$ -inch sieve, and plunge the 3-inch pots, each containing half-a-dozen cuttings, almost to the rim, covering the box with a piece of glass. They are shaded lightly from bright sunshine until they are rooted, when air and light are admitted gradually. Afterwards, they are placed in a light position near the glass, until they require potting singly into 3-inch pots. The point of the growth is pinched, when the plants are about 6 inches high, to encourage breaks. As soon as the breaks are starting to grow, the plants are ready for a shift into 5 and 6-inch pots, according to the strength of the varieties. For this potting the compost should consist of good loam, leaf-mould, old mortar rubble, and a sprinkling of soot. As the growths advance, the pinching is continued, at intervals of a few days, until the end of July, to ensure a succession of bloom. When they are well-rooted in

these pots, but before they become potbound, they are shifted into 8-inch and 9-inch pots, using a similar compost to the last, but in a rougher state, and adding to a barrow-load of the compost sufficient wood ashes to fill a 7-inch pot. The potting is done very firmly. By the end of July, the plants should be strong, with numerous growths, ready to begin flowering at the beginning of September. I find that in 8-inch and 9-inch pots they carry better flowers all the year round than if restricted to 6-inch pots. For stimulants, soot water is used chiefly, and farm-yard manure water occasionally. I use Carvita as a preventive against rust, and fumigation is carried out to prevent red spider, thrip, and green fly. The plants are shaded only on very hot days, or the flowers would soon lose their colour. In winter, an atmospheric temperature of 50° to 55° is maintained at night, and air is admitted at all times in such a manner as not to cause cold draughts. J. Herdman, Under Fell Gardens, Burton, Westmorland.

THE BEST METHOD OF STORING CARROTS. I am surprised that so experienced a cultivator as Mr. J. Dunn (see p. 181) should recommend the storing of Carrots in a shed, and still more, that they should be so buried in sand as to exclude the light. If Carrots are completely buried either in soil or sand, their "tops" or growth buds soon decay, and the decay spreads to the root. When roots are stored in large quantities they may become heated, but this is not altogether responsible for the frequent scarcity of stored Carrots in spring. Those who are in the habit of examining stores of these roots cannot fail to notice that the roots having exposed tops are generally sound. Mr. H. W. Ward had probably noticed this, for when, in March, 1895, I went as foreman to Longford Castle, most of the Carrots were stored thickly in rows in the open air, their slightly green tops protruding from the ashes or soil in which they were embedded. The quality of the roots was first-rate, and not a decayed specimen was to be seen among them. These results were so superior to those generally obtained by storing in a cool, dry shed and covering with sand that I have since practised Mr. Ward's method, and recommend it to others. Before a severe frost, a sufficient quantity for immediate use can be taken out of the ashes and placed under cover. J. Comber, Nyman's Gardens, Handcross.

My reason for recommending storage in a cool, dry shed is because I have found such roots to retain their colour better than those allowed to remain in the open, either in soil or ashes. I am aware that some gardeners store their Carrots by planting them closely together in a south border, but exposure to rain in a mild season causes them to make fresh growth, which, in my opinion, depreciates their colour and value. Carrots sown last April (and my note referred to these) should be lifted and stored in a place protected from rain as soon as possible. Carrots intended for spring supplies are still in full growth here, and they will be allowed to remain in the ground until their foliage shows signs of ripening, when they will be lifted and stored as recommended in my previous note. John Dunn, Royal Gardens, Windsor.

BEAUTY IN NATURE.—In the *Pall Mall Gazette* of September 13 there appeared some comments upon the letter of Mr. N. E. Brown in your issue of the 3rd inst., describing the hidden beauty of a certain rare Asclepiad. I have addressed the following letter to the editor of the *Pall Mall Gazette* on the subject:—"Dear Sir,—My attention has been drawn to some interesting speculation in your issue of the 13th on the subject of the hidden beauty of a certain flower (*Pectinaria asperiflora*) and the impossibility of reconciling this with the Darwinian theory that we owe all the beauty of flowers to insects. The only suggestion which your writer of 'Naturalist Notes' is able to make in conformity with that theory is that, the flower is decadent at the present day and now hides useless glories which once were visible and useful. How long will it be, I wonder, before our men of science will recognise that there is a force of life in all nature which makes for beauty and harmony, and that it is the same force of life which in man—the highest thing in nature—makes for goodness and sympathy. These are only parallel expressions of the same force of life, which religion can recognise as the Spirit of God working in nature; but men of science

insist in fixing their thoughts upon the phenomena of matter only, ignoring the force which manifestly animates all matter. If they would open their minds to this, all difficulties would vanish from the biological problems upon which so much misdirected intellect is wasted. —Yours, &c." I have ventured to quote this letter to you because I know that there must be thousands among your readers surrounded daily with the beauties of nature in their gardens, who must feel how utterly inadequate the dry-as-dust theories of recent science are to explain the ceaseless tendency of beautiful things to become more beautiful under care. Recognise that the innate force of life makes for beauty in nature, as it makes for goodness in man, and you can see the Spirit of God working around you every hour of every day. This will be the fundamental truth of the science of the future. *E. Kay Robinson, Editor "The Countryside Monthly," 210, Strand, W.C.*

DESTRUCTION OF WASPS.—I saw it stated some time ago in your pages that cyanide of potassium provided a good means of destroying wasps' nests, and I have since found it most thoroughly effective. There was a particularly strong colony in a Yew bush close to the house, which caused us great annoyance, so I got 2 ounces of cyanide from the druggist, and dissolved it in a quart of

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

SEPTEMBER 13.—*Present:* Prof. G. S. Boulger, F.L.S. (in the Chair), and Messrs. J. T. Bennett-Poe, A. Worsley, W. Hales and F. J. Chittenden (hon. sec.).

Fruit of Hippocastanum calypttratum.—Mr. WORSLEY showed a mature fruit of *Hippocastanum calypttratum*, drawing attention to the membranous ring which, attached to the style and the top of the ovary, is separable at maturity intact, and to the deep lobing of the fruit at the base, which is not shown in published figures, these having apparently been prepared from immature fruits.

Plantago media bracteata.—Messrs. BARR & SONS sent an excellent specimen of this plant, in which the bracts are so enlarged that they form a dense rosette of closely-packed and evidently spirally-arranged ovate, green leaves at the apex of the peduncle. The axis elongates but very slightly as it gets older.

Maize inflorescences.—Mr. A. TURNER, Chelmsford, sent staminate inflorescences of Maize, in which some of the flowers had been replaced by

distinct varieties with hereditary characters, originating solely from the "direct action" of stiff or light soils, illustrating Darwin's contention that varieties arise "without the aid of selection."

The influence of starvation on sex.—Prof. HENSLOW also wrote as follows:—It is well known that the male flowers of monoecious trees, as Oaks, are generally on the more slender shoots than the females. So, too, in dioecious herbs the females are, as a rule, on stronger plants than the males. The following experience illustrates both these facts. Finding *Mercurialis annua* to be an abundant weed in the allotment grounds at Hythe, I collected some seed and sowed it very thickly in two 3½-inch pots. In one, of a total of 25 seedlings, 16 were male and 9 female. In the others, there were 64 plants, of these 39 were male and 10 female, the remainder were too starved to produce flowers at all. The 55 males, therefore, were 74 per cent. and the females only 26. Not one of the plants was above 4 inches in height, but the females were decidedly stouter than the more slender males.

Hybrid Primula.—Messrs. JAS. VEITCH & SONS sent a plant of *Primula japonica* × *P. Bulleyana*, which they had named *P. × Briscoei*. The habit of the plant, which was of vigorous



FIG. 94.—MODEL GARDEN SHOWN AT THE JAPAN-BRITISH EXHIBITION BY THE CITY OF TOKYO MUNICIPAL AUTHORITIES.

(See p. 227.)

boiling water just before using it, mixing it in a garden pail, and applying it with a large brass syringe. The gardener syringed the nest by candle-light at night, and another man at the same time broke it down with a hoe. We are much bothered with wasps taking up their abode in a large head of turf laid up to rot. We have tried all kinds of remedies, such as boiling water, burning sulphur, blowing up with gunpowder, tar, &c., but none proved a success, and eventually the nests had to be dug out, yet we no sooner got rid of one than another appeared. Now, as we have found the cyanide of potassium so successful, I would like to know if it would injure the soil for potting purposes, or if it results merely in fumes that will pass off in time? *I. S. E.* [The cyanide of potassium will not injure the potting soil.—Eps.]

EFFECT OF ALUM ON PLANTS.—Having read somewhere that powdered alum kept off slugs and did no harm to any plant, I powdered *Cyananthus lobatus* with it: the effect is remarkable: the plant looks far less healthy than it did, and I shall anxiously await its re-appearance in March, but the colour of the flower has been changed from the ordinary purple to a blue corresponding most nearly to royal blue. *A. C. B.*

pistillate ones and branching cobs, some of the branches of which bore staminate instead of pistillate flowers.

Fasciation in Vegetable Marrow.—Mr. W. H. MASTIN, Haslemere, sent an example of a fasciated stem of Vegetable Marrow about 4.5 inches broad.

Reversion in Radishes.—The Rev. Prof. HENSLOW, V.M.H., sent the following communication:—Pliny tells us that the Greeks discovered how to turn the Rape into the Turnip by sowing the seed in a very heavy soil. M. Languet de Sivny found that the seeds of short-rooted Carrots, when sown in the alluvial deposits in France, yielded immediately in the first generation long-rooted plants. M. Carrière found that seeds of the wild Radish (*Raphanus Raphanistrum*) gave a majority of long roots in the light soil near Paris, but Turnip forms in a heavy soil in the South of France. I sowed the seed of the Turnip-Radish in a prepared, very light soil; of 30 plants 20 were long-rooted, and 10 produced the normal forms, thus corroborating M. L. de Sivny's experience. The point to notice is that as the Turnip and long-rooted Radish come true, as a rule, from seed, as well as the short and long Carrots, &c. We have here

growth, was that of *P. japonica*, but the scape resembled *P. pulverulenta*, and the flowers were in colour and form more like those of *P. pulverulenta*.

WOODSTOCK AGRICULTURAL AND HORTICULTURAL.

SEPTEMBER 13.—This old-established society held its annual show on this date in Blenheim Park, and near to the Palace. The horticultural exhibits were of excellent quality throughout, especially the fruits, vegetables, and Dahlias. The Royal Horticultural Society offered medals for non-competitive exhibits.

Mr. JOHN WALKER, Thame, arranged on a space of 180 superficial feet an exhibit of Show, Fancy, Single and Pompon Dahlias. A Silver Medal was awarded. Another fine display was made by Mr. E. HICKS, Wallingford, who staged some 50 leaves of garden Roses of variety. Mr. J. MATTHEW and Messrs. F. TAYLOR & SONS also staged Roses. Messrs. GARDINER & ADAMS, Mr. CHARLES TURNER, and Messrs. J. H. WHITE & Co., Worcester, staged hardy flowers.

The finest non-competitive group consisted of Orchids, Carnations, and other exotic plants from the gardens at Blenheim Palace. It occupied the

whole of the central ground space of one of the large marquees, upwards of 700 superficial feet. In addition to this display the DUKE of MARLBOROUGH showed a collection of about 50 dishes of dessert fruit, which included large clusters of Black Alicante Grapes, Lord Palmerston and Dymond Peaches, Stanwick Nectarines, and Peasgood's Nonesuch Apples; also a large collection of vegetables. A Gold Medal was awarded these collective exhibits.

In the competitive classes, fruit made a splendid show. For a decorated table, 10 feet by 3 feet, F. J. MYERS, Esq. (gr. Mr. F. Bush), was awarded the 1st prize, having Diamond Jubilee and Muscat of Alexandria Grapes, Melons, Peaches, Nectarines, and other fruits; 2nd, Mrs. BRADSHAW (gr. Mr. R. Wadham).

In Messrs. Sutton & Sons' class for a collection of six kinds of vegetables there was keen competition. The 1st prize was won by Mrs. BRADSHAW; 2nd, Mr. T. SURMAN.

Dinner-table decorations were so good that three extra awards were made.

The secretary is Mr. T. D. Hughes.

NATIONAL ROSE.

SEPTEMBER 15.—The autumn exhibition of the National Rose Society was held on this date in the Royal Horticultural Society's Hall, Vincent Square, Westminster. Although the low temperatures and copious rains of this summer have affected most flowers adversely, Roses were never more satisfactory than this year, and in proof of this we may point to Thursday's festival. Seldom have so many blooms of fine proportions and perfect condition been brought together at an autumn Rose show. There were several new Roses, including seedlings and sports.

NURSEYMEN'S CLASSES.

For 36 blooms, distinct, the 1st prize was won by Messrs. JAS. COCKER & SONS, Aberdeen, with a splendid exhibit, which included the following varieties:—Avoca, Mme. M. Soupert, Gustave Piganeau (an extraordinarily fine bloom), Jas. Hill, Capt. Hayward, Mme. Eugene Verdier (a grand example), Hugh Dickson (a very superior bloom), Mrs. McKee (the finest white Rose noted), Louis van Houtte, Duc de Rohan (a fine flower), Betty, A. K. Williams, Lyon-Rose, Auguste Rigotard, W. Shean, Souvenir M. Rodocanachi, Mme. Caroline Testout, Pharisier, J. Stuart Mill, Helen Keller, Dr. Andry, Mrs. John Laing, General Jacqueminot, Killarney, Liberty, White Lady, Prince Arthur, Frau Karl Druschki, La France, '89, Gustave Grunerwald, Earl Dufferin, Mrs. S. Clark, Marquise de Londonderry, Gladys Harkness (a very choice example), and Ben Cant. 2nd, Messrs. ADAMS & CRAIGMILE, Fernielea Nursery, Rubislaw, Aberdeen, with a capital exhibit, fresh, and in the best of condition; still, many points behind the 1st prize lot. We may name the following as being the finer flowers:—Mme. Eugene Verdier, Mme. Lelièvre Delaplace (a deep-crimson bloom of a fine form), Mme. Wagram, Comtesse de Turenne (a lovely blush-coloured Rose, of large size), Hugh Dickson, Lyon-Rose, John Cuff (of a rich, rose tint), Mme. Caroline Testout (without a blemish), Chas. Graham, Gloire de Chedane, Mrs. J. Laing, and Richmond. 3rd, Mr. W. FERGUSON, Dunfermline. There were seven competitors.

In a class for 36 varieties, three or more trusses of each, the 1st prize was awarded to Mr. J. MATTOCK, Headington, Oxford, who showed choice varieties, arranged as a sloping bank, of bunches containing 20 blooms in each. The following varieties were the more conspicuous:—Lyon-Rose, Mr. Jas. Hill, Mme. Antoine Mari (a delicate, pink Rose, changing to white as it ages), White Maman Cochet, Hugh Dickson, Frau Karl Druschki, Mrs. J. Laing, Kaiserin Augusta Victoria, Ben Cant, Marie van Houtte (an exquisite flower), Mme. Melanie Soupert, Rhea Reid, La Tosca, Pharisier, and Mrs. Sharmar Crawford. 2nd, Messrs. F. CANT & CO., Braiswick, Colchester, who had a group with a similar arrangement of the flowers. The finer varieties were Lady Ashtown, Perle von Godesberg (a flat bloom of a creamy-white tint), White Maman Cochet, Mrs. Theodore Roosevelt, La Tosca, Larry Kirk, Hugh Dickson, Lyon-Rose, Souvenir de Maria de Zayas (a rich crimson, well-filled bloom, of a flat form), Capt. Hayward, Antoine Rivoire, and Earl of Warwick.

For 18 blooms, distinct, Mr. G. PRINCE, Longworth, Berkshire, was placed 1st with somewhat indifferent blooms, but which included a fine one of Mrs. E. Mawley, for which a Silver Medal was awarded as being the best Tea Rose shown by a nurseryman. 2nd, Mr. HENRY DREW, Longworth, whose stand contained perfect examples of Mme. Constant Soupert, Auguste Comte, Mrs. E. Mawley, Niphotos, Medea, and Maman Cochet. 3rd, Messrs. ADAMS & CRAIGMILE, Fernielea Nursery, Rubislaw, Aberdeen. There were three other competitors in this class.

For 12 distinct varieties, seven blooms of each, occupying a space of 6 feet by 3 feet, Messrs. J. COCKER & SONS, Aberdeen, were 1st. Mr. HUGH DICKSON, Belfast, 2nd; and Mr. W. FERGUSON, Dunfermline, 3rd.

Mr. CHAS. TURNER, Slough, took the 1st prize in a class for 12 distinct varieties, Mr. J. CROSSLING, Penarth, following.

In a class for 12 varieties, distinct, shown in Bamboo stands, Mr. J. MATTOCK was awarded the 1st prize, having a fine display of blooms, arranged in the form of a fan. The finer flowers were those of Phyllis, Prince de Bulgarie, Coralina (very bright in colour), Mme. A. Chatenay, and Comtesse Festetics Hamilton. 2nd, Mr. H. DREW, Longworth, with a good display of blooms, but less striking than Mr. MATTOCK's.

For 12 varieties of Polyantha Roses of dwarf habit, six trusses of each, the 1st prize was given to Mr. J. MATTOCK, who showed small bunches in vases of Eugene Lamesch, Mrs. Cutbush, Marie Pavié, Perle de Rouges, Schneewittchen, and



[Photograph by John Gregory.]

FIG. 95.—DWARFED TREE OF THUYA OBTUSA REPUTED TO BE 125 YEARS OLD.

(Awarded R.H.S. Silver Cup, being the finest example of a pigmy tree at the Japan-British Exhibition.)

(See p. 227.)

DECORATIVE ROSES.

For 24 distinct varieties, not fewer than three nor more than seven trusses of each variety, the 1st prize was made in favour of Mr. J. MATTOCK, who had choice blooms of Marie van Houtte, Lady Battersea, La Tosca, Irish Elegance, W. A. Richardson, Gottfried Keller, Mme. Dupuy Jamain, M. Paul Lede, Liberty, Simplicity, and Edu Meyer. 2nd, Messrs. PAUL & SON, Cheshunt, with good blooms of Irish Glory, Dorothy Page Roberts, Perle d'Or (Polyantha), Peggy, La Tosca, Antoine Rivoire, Gustave Regis, and Léonie Lamesch. 3rd, Messrs. G. COOLING & SONS, Bath.

others. Messrs. F. CANT & CO., Colchester, were placed 2nd, and Mr. G. PRINCE 3rd.

GROUP OF ROSES.

In this competition the 1st prize fell to Messrs. HOBBIES, LTD., East Dereham, for a pretty arrangement just a little too stagey; and the 2nd to Messrs. PAUL & SON, Cheshunt, for a group close by the recess, in which, among others, we observed the bright-looking and effective Lady Roberts and Lady Ashtown (an excellent bedding variety).

For a group of cut blooms shown on staging, Mr. F. M. BRADLEY, Peterborough, was 1st, his

most conspicuous flowers being the new Simplicity with big, white blooms, and extra large-flowered Frau Karl Druschki, J. B. Clark, Harry Kirk, and C. J. Graham. 2nd, Messrs. G. JACKMAN & SON, Woking, who had a closely-packed group, in which the Lyon-Rose, Betty, General McArthur, Marie van Houtte, Mme. Ravary, and the single-flowered variety Dainty were noted.

The 1st prize for a representative group of cut Roses, shown on staging, was taken by Mr. G. PRINCE, Longworth, for flowers of surpassing quality displayed with good taste. Especially effective were the combinations of white and pink, and white and dark crimson-coloured blooms. A Gold Medal was awarded this exhibitor. Messrs. GUNN & SONS, Olton, Birmingham, received the 2nd prize, which included the Society's Silver-gilt Medal. Messrs. J. JEFFERIES & SON, Cirencester, were awarded a special prize.

Messrs. B. R. CANT & SON, Colchester, showed a simple, sloping bank of Roses, and among them the new seedling H.T. St. Helena, a flower having cream-coloured petals towards the outside of the flower, and a pink suffusion on the inner ones. Another new introduction noted was Claudius, of a purplish-crimson tint and fine shape.

THE KING'S ACRE NURSERIES, LTD. (late

with good examples of Mrs. J. Laing, Gladys Harkness, and Hugh Dickson. Mr. MORRIS, in this class, was awarded the Society's Silver Medal for a bloom of Mrs. W. J. Grant, as being the best H.T. shown by an amateur. The box of blooms in which this flower was found took the 3rd prize, the 2nd going to Mr. G. MOULES, of Hitchin, Herts.

In the class for 12 distinct varieties, in three or more trusses of each, the Rev. J. H. PEMBERTON, Havering-atte-Bower, was 1st, and Mr. F. DENISON, Cranford, Leamington, 2nd. For this competition the exhibits were required to be arranged so as to display, as far as possible, the foliage and habit of growth of each variety.

In the class for 12 blooms of Tea and Noisette Roses, distinct, open to all amateurs, irrespective of the number of plants they cultivate, the 1st prize was won by Mrs. B. FORTESCUE, with especially fine examples of Souvenir de Pierre Notting, Miles Kennedy, and Auguste Comte. 2nd, Rev. T. G. W. HENSLAW, Stanton St. Quinton, Chippingham, with good blooms of Rubens, Maman Cochet, Lady Roberts, and others.

For 12 distinct varieties of decorative Roses, not fewer than three nor more than seven trusses of each variety, arranged on a space not to ex-

Mrs. Muir McKean, a flower having an elongated centre, of a bright crimson colour, with a purplish tinge. Dorothy Radcliffe, a Hybrid Tea, of a pale pink colour, and having a beautiful shape, was awarded a Silver-gilt Medal.

Messrs. ALEXANDER DICKSON & SONS, LTD., Newtownards, showed a new Tea Rose, Mrs. Foley Hobbs, white, having a slight pink tinge on the centre petals. Examples of this variety were shown as cut from plants grown under glass and in the open ground. A Gold Medal was awarded.

Messrs. HUGH DICKSON & SON, Belfast, received a Silver-gilt Medal for H.T. Marchioness of Waterford, a globular flower, well filled with petals, the inner ones of a bright-rose tint, the outer petals much paler, and reflexed at the edges. This firm also received a Silver-gilt Medal for H.T. Mrs. C. E. Allan, a blush-coloured Rose, having reflexed petals, the colour being more intense in the centre than elsewhere. It is a flower of large size.

Messrs. W. & R. FERGUSON, Brucefield, Dumfermline, were awarded a Silver-gilt Medal for H.T. Mrs. Jas. Ferguson, a blush-coloured flower.

A Card of Commendation was awarded to Rev. J. H. PEMBERTON, Havering-atte-Bower, for Hybrid Musk Rose Daphne, which has a flowering season from June to November. It is stated to be proof against mildew. The flower is semi double, of a delicate pink colour, becoming paler with age. The plant produces its blooms in bunches at the ends of the main shoots, which attain a length of 3 feet in some cases. The variety, when shown by the raiser at the meeting of the Royal Horticultural Society on August 31, 1910, obtained an Award of Merit.

PREMIER BLOOMS.

The Silver Medals offered for the best blooms were awarded as follows:—

Hybrid Tea, Tea, or Noisette var. (Nurserymen): Messrs. J. COCKER & SONS with H.P. Hugh Dickson; the same variety, shown by Mr. R. BARROWMAN, took the Silver Medal in the Amateurs' Classes.

Hybrid Tea Roses (Nurserymen): Messrs. J. COCKER & SONS, with Gladys Harkness. (Amateurs): Mr. E. W. MORRIS, with W. J. Grant.

Tea or Noisette Ros. (Nurserymen): Mr. G. PRINCE, with Mrs. Edward Mawley. (Amateurs): Mrs. FORTESCUE, with White Maman Cochet.

VEGETABLE SHOW AT MANCHESTER.

SEPTEMBER 14.—A competition arranged by Messrs. DICKSON & SONS for the best vegetables grown by their customers was held on this date.

For four bulbs of Premier Onion there were 10 awards, the 1st prize being won by Mr. FITZPATRICK, The Lodge, Bedford (gr. Mr. Tysoe); 2nd, The Lady THEODORA GUEST, Inwood, Templecombe (gr. Mr. Hester).

Mr. FITZPATRICK also showed the best dish of 25 pods of Scarlet Runner Beans; the best Matchless Carrots and the best Leeks; Mrs. WALTERS, Bearwood, Wokingham (gr. Mr. Barnes), the best six roots of Market Favourite Beet.

B. H. COLLINS, Esq., Dunorlan, Tunbridge Wells (gr. Mr. Caterer), showed the best bunch of Moneymaker Tomato; 2nd, Mr. W. COX, The Gardens, Oakfield, Wemdon, Bridgwater.

Mr. W. FOLKES, Ampthill, Beds., excelled in the class for three heads of Snowdon Cauliflower: 2nd, Hon. VICTORY GIBBS, Aldenham House (gr. Mr. Beckett).

LORD BURNHAM, Hall Barn, Beaconsfield (gr. Mr. Johnson), was placed 1st for three heads of Selected Sugar Loaf Cabbage; 2nd, Duke of SUTHERLAND, Lilleshall, Newport (gr. Mr. Adams).

T. R. OWEN, Esq., The Glen, Haverfordwest (gr. Mr. Griffiths), won the 1st prize for six roots of Perfection Carrots.

The Hon. VICARY GIBBS, Elstree (gr. Mr. Beckett), had the finest Prize Pink Celery; 2nd, Earl SPENCER, Althorp (gr. Mr. Cole).

Earl SPENCER showed the best selected Parsnips; Lord BELPER, Kingston Hall, Derby (gr. Mr. Cooke), the best six roots of Manchester Market Turnip and the best pods of Gladstone Pea; and C. BLUNDELL, Esq., Halsall House, Ormskirk (gr. Mr. Guy), the best 30 pods of Hercules Pea.



[Photograph by John Gregory.]

FIG. 96.—STONE LANTERNS EXHIBITED BY THE YOKOHAMA NURSERY COMPANY, AT THE JAPAN-BRITISH EXHIBITION.

(See p. 227.)

Cranston's), Hereford, had constructed a sloping bank of Roses, the smoothness relieved by pyramids and cut blooms of various types of Roses, interspersed with small vases filled with cut blooms.

AMATEURS' CLASSES.

The 1st prize for 18 cut blooms, in distinct varieties, was won by Mr. G. A. HAMMOND, Cambrian House, Burgess Hill, who showed beautiful examples of Mme. Eugénie Verdier, Mildred Grant, Mme. Mélanie Soupert, Horace Vernet, Bessie Brown, Frau Karl Druschki, Ulster, Mrs. Ed. Mawley, and Hugh Dickson. 2nd, Mr. E. M. EVERSFIELD, Denne Park, Horsham, with extra large flowers of J. B. Clark, Ulrich Brunner, Comte de Raimbaud, Mrs. J. Laing, and Mrs. Theodore Roosevelt.

For 12 blooms, distinct, the 1st prize was won by Mr. R. BARROWMAN, Rosebank Cottage, Baggeridge, N.B., whose flower of Hugh Dickson was awarded the Society's Silver Medal as being the best bloom of a H.P. variety. 2nd, Mrs. FORTESCUE, Dropmore, Maidenhead, with very fine blooms of Auguste Comte, Claudius, Countess of Derby, Horace Vernet, and Hugh Dickson.

Mr. URTON, 16, Claremont Street, Leicester, excelled in the class for nine blooms, distinct,

ceeded 5 feet by 3 feet, the 1st prize was won by Viscountess ENFIELD, Wrotham Park, Enfield.

Hips of nine distinct species of Roses, shown with foliage, occupied the whole of one of the tables half the length of the Hall. The 1st prize was won by Messrs. G. PAUL & SON, Cheshunt; 2nd, Messrs. G. COOLING & SONS, Bath; 3rd, Mr. G. PRINCE, Longworth.

Dinner-tables decorated with Roses were fairly numerous, and executed with much good taste. Any kind of cut foliage, Ferns, or grasses was allowed. Mrs. O. G. ORPEN, West Bergholt, Colchester, was declared the winner of the 1st prize, which included a Piece of Plate, for a table set off by bowls full of Lady Hillingdon Rose. Other winners of 1st prizes in the decorative classes were Mrs. G. C. SAWDAY, of Weybridge; Mrs. J. W. SMITH, of Bushey Heath; and Mrs. E. P. BUTCHER, of Ipswich.

NEW SEEDLING ROSES.

The Society's Gold Medal was awarded to Messrs. MCGREEDY & SONS, Portadown, Ireland, for the variety Mrs. H. Stevens, a Tea Rose, white, with a pointed, central mass of petals, and of moderate size. This firm was awarded a Card of Commendation for H.T.

NATIONAL CHRYSANTHEMUM.

SEPTEMBER 19.—A meeting of the executive committee was held on Monday last at Carr's Restaurant, Strand; Mr. Thomas Bevan presiding.

The question was considered as to the desirability of the society participating in the International Horticultural Exhibition to be held in London in 1912, and it was resolved that prizes for displays of Chrysanthemums should be offered. The usual interim financial statement was presented, showing a substantial balance in hand for the period. With regard to the Chrysanthemum Show it was proposed to hold in connection with the Brussels Exhibition, it was announced that owing to the fire the building available for the show was now otherwise occupied, and that the Chrysanthemum Show would have to be abandoned. The International Autumn Show at Paris was next referred to. The president, Sir Albert Rollit, and Mr. Payne having been elected members of the jury.

Mr. Payne announced that he would be pleased to receive subscriptions for the fund being raised to erect a monument to the memory of the late Ernest Calvat.

The details of the conference to be held on December 5 were announced (see p. 233).

It was decided that the annual dinner shall be held as usual towards the end of November at the Holborn Restaurant. The judges for the October and November shows were elected. The election of new members concluded the business.

NATIONAL DAHLIA.

SEPTEMBER 20, 21.—The second exhibition of the above Society in the present season was held at the Royal Botanic Gardens, Regent's Park, on these dates. There was a keen competition in many of the principal classes. Trade displays were arranged in the corridor, whilst in the conservatory were exhibits forming a special competition for fruit preserved without sugar. The weather was fine, and there was a good attendance on both days.

NURSERYMEN'S CLASSES.

Mr. JOHN WALKER, Thame, secured the premier honours for three varieties of six blooms each of Cactus Dahlias, shown in vases, put into commerce for the first time during 1908-9, staging Mercia, Echo, and Mrs. A. Dyer; Mr. M. V. SEALE, of Sevenoaks, won the 2nd prize; and Messrs. KEYNES, WILLIAMS & Co., Salisbury, the 3rd.

Pompon-Cactus Dahlias were well represented, the 1st prize being awarded to Messrs. J. BURRELL & Co., Cambridge, for a splendid exhibit embracing the varieties Coronation, Titus, W. Marshall, Alwyn, Nora, Minima, Lena, Martha, Argus, Nain, Cheerful and Sweet; 2nd, Messrs. J. CHEAL & SONS; 3rd, Mr. M. V. SEALE.

Mr. JOHN WALKER, Thame, excelled in the class for 24 blooms of Show Dahlias, distinct, displayed on boards. A selection of his blooms included Wm. Powell, James Cocker, Florence Tranter, Standard, Daniel Cornish, Portia, and Duchess of Albany. 2nd, Mr. S. MORTIMER, Rowledge, Farnham; 3rd, Messrs. KEYNES, WILLIAMS & Co.

In the class for 12 varieties of Cactus Dahlias, shown in bunches of six blooms, Messrs. J. STREDWICK & SON, St. Leonards, proved the 1st prize winners, having excellent blooms of W. Marshall, The Earl, Indomitable, Red Admiral, Dr. Roy Appleton, Mrs. Douglas Fleming, H. H. Thomas, C. E. Wilkins, Golden Eagle, Satisfaction, H. L. Brousson and Jupiter. Messrs. J. CHEAL & SONS and J. BURRELL & Co. were placed 2nd and 3rd respectively.

Messrs. STREDWICK & SON also excelled in the class for 24 Cactus blooms, distinct, shown on boards, followed by Messrs. KEYNES, WILLIAMS & Co., with Messrs. J. BURRELL & Co. 3rd.

Pompon Dahlias in 12 varieties, grouped in bunches of 10 blooms, were well staged by Mr. CHARLES TURNER, Slough, who secured the leading award with clean, bright flowers of Bacchus, Ideal, Phyllis, Adelaide, Marietta, Nerissa, Mignon, Ganymede, Queen of Whites, Darkest of All, Mary and Cyril; 2nd, Messrs. J. BURRELL & Co.; and 3rd, Messrs. J. CHEAL & SONS.

The Dean Memorial Gold Medal offered in the trade classes for single Dahlias was secured by Messrs. J. CHEAL & SONS, who staged a handsome exhibit, especially good being the varieties

Cardinal, Lady Bountiful and Mrs. Joynson Hicks; 2nd, Mr. M. V. SEALE.

Mr. S. MORTIMER obtained the 1st prize in the class for new seedling Show or Fancy Dahlias with the variety Wm. Pemberton.

Mr. CHARLES TURNER had the finest Pæony-flowered Dahlias and the best Giant Decorative varieties, securing the 1st prize in both classes.

AMATEURS' CLASSES.

The leading class for amateurs was for nine varieties of Cactus Dahlias in bunches of three blooms each. The 1st prize was secured by the Rev. ARTHUR BRIDGE, Worth Rectory, Three Bridges. This exhibitor had a fine collection, consisting of the varieties Harold Peerman, Satisfaction, Iolanthe, W. Marshall, H. H. Thomas, C. E. Wilkins, Red Admiral, Snowdon and Rev. T. W. Jamieson. Mr. F. GRINSTED, Beaufort Park, Battle, obtained the 2nd prize; and Sir JOHN KENNEDY, K.C.B., Holmhurst, Baldslow (gr. Mr. W. E. Peters), the 3rd prize.

For the best six blooms of any variety of either white or pink-flowered Cactus Dahlias, the Rev. ARTHUR BRIDGE again took the 1st prize, with Mr. CHAS. LUCKIN, Apsley, and E. E. BARTON, Greenwich, as winners of the 2nd and 3rd prizes respectively.

For six varieties of Cactus Dahlias, shown in bunches of three blooms, the president of the Society, Mr. EDWARD MAWLEY took leading honours with Beryl, Brigadier, Leda, Evening Star, Red Admiral, and Harold Peerman; 2nd, the Rev. ARTHUR BRIDGE; 3rd, Mr. G. STEVENSON, Chadworth Cottage, Esher.

In the class for four varieties, three blooms of each sort, shown on boards, Mr. F. H. CURRY, 35, Osborne Road, Palmer's Green, was placed 1st, with Mr. CHARLES LUCKIN and Mr. R. C. WILLIS following in the order of their names.

Mr. JOHN HICKS, Bensham Manor Road, Thornton Heath, secured the 1st prize in the class for 12 blooms, distinct, shown on boards, with a fine, clean set of blooms; 2nd, Mr. G. DAVIDSON.

In the class for 12 blooms of Cactus Dahlias, arranged in vases for effect, there were nine entrants. Mr. E. MAWLEY secured the 1st prize for a charming vase of Dr. G. Gray, arranged with copper-coloured foliage; 2nd, Mr. JOHN HICKS.

The best 12 blooms of show Dahlias, distinct, exhibited on boards, were again shown by Mr. S. H. COOPER, Chippenham, who holds the Society's Champion Cup for show Dahlias; 2nd, Mr. A. ROBBINS, Keynsham.

Pompon Dahlias were well shown: in the class for six varieties in bunches of six blooms, Mr. G. DAVIDSON, Thornton Heath, was placed 1st; 2nd, Mr. A. P. IRONSIDES, of Chippenham.

The Dean Memorial Gold Medal, offered as the 1st prize for six varieties of single Dahlias, in bunches of six blooms, was secured by Mr. E. MAWLEY, with a good stand of well-finished blooms; the Rev. A. BRIDGE was placed 2nd.

FIRST-CLASS CERTIFICATES.

Dahlia American (Cactus), from Messrs. KEYNES, WILLIAMS & Co.—A fine, bold flower, having a white ground, splashed and striped with crimson.

D. Mrs. Douglas Fleming (Cactus).—A white flower with a greenish centre.

D. H. L. Brousson (Cactus).—A pleasing shade of rosy mauve, with lighter centre.

D. Flagstaff (garden Cactus).—A handsome flower, borne well above the foliage, and coloured rosy salmon.

D. White Ensign (garden Cactus).—A fine, bold, white flower, suitable for decoration. These varieties were shown by Messrs. J. STREDWICK & SON.

D. William Pemberton (Fancy).—A large, handsome flower, with yellow ground, splashed and striped with crimson.

D. Model (Show).—A full-sized flower, with white base; the florets are tipped and shaded with rosy purple. These two were shown by Mr. MORTIMER.

D. Pink Beauty (Pompon), from Messrs. J. CHEAL & SONS.—A pretty flower of a delicate shade of pale pink.

BOTTLED FRUITS.

In the bottled fruit competition, Mrs. V. BANKS, Grosvenor Square, secured the 1st prize for 12 bottles of various fruits preserved in pure water only; 2nd, Mrs. L. BIRKINSHAW, Retford.

For six bottles, Mrs. E. BECKETT, Aldenham House Gardens, Elstree, took the 1st prize, and for three bottles Mrs. V. BANKS was again successful.

NON-COMPETITIVE AWARDS.

Large Gold Medals were awarded to Messrs. HOBBIES, LTD., for Dahlias and Roses; Messrs. T. S. WARE, LTD., for Dahlias; Messrs. BAKER'S, for Dahlias; and Mr. J. T. WEST, for Dahlias.

Gold Medals to Messrs. S. SPOONER & SONS, for a collection of hardy fruits; and to Mr. J. E. KNIGHT, for Dahlias.

Silver gilt Medals to Mr. CHARLES TURNER and Messrs. WHITELEGG & PAGE, both for collections of Pæony-flowered Dahlias.

Obituary.

THE LATE MAX LEICHTLIN.—The name of Max Leichtlin, whose death at the age of 80 years we announced a fortnight ago, is doubtless familiar to many of our readers on account of its association with numerous species of plant which Leichtlin introduced to cultivation. At the same time, very few people in this country know anything respecting his personality or the life he lived at Baden-Baden. For this reason, the following information, supplied by Mr. H. J. Elwes, will be read with interest:—

Max Leichtlin was born at Karlsruhe in October, 1831. He obtained his first experience in horticulture in the celebrated nursery of Louis van Houtte at Ghent. I know very little of his early life, but he told me that, after spending some time in South America, he returned penniless to Dublin, and there found employment, under the late Dr. Moore, at the Royal Botanic Gardens, Glasnevin. His great ability was soon recognised, and Dr. Moore wished him to stay at Glasnevin, but after a year or so he returned to Germany, and lived at Karlsruhe, where his father owned a paper factory. He soon began to grow plants, and in 1867 his name was first mentioned by Sir Joseph Hooker, who named *Lilium Leichtlinii* after him. When I began my *Monograph of Lilium* a few years later, I found in Max Leichtlin my best guide in all questions relating to the culture of Lilies. In 1883 he was honoured by the dedication of a volume of the *Botanical Magazine*, and, between 1870 and 1908, I find no fewer than 35 plants figured in that work which were introduced by him. Leichtlin was an excellent correspondent, and he wrote very good English. If his correspondence has been preserved, it would be worth while to make a selection of it for publication, as it would be certain to contain much information about the introduction and history of many choice, hardy plants. Tulips, Irises, and Gladioli were perhaps his favourites, next to Lilies; for a time he grew a collection of Nerines, but he never cared much for anything that could not be grown out-of-doors, although he used frames largely for nurturing his seedlings. He had little or no space for the cultivation of shrubs and trees, but he knew a good deal about them, nor did he show much interest in florists' flowers. Leichtlin introduced the lovely *Gladiolus princeps*, and afterwards crossed it with various garden sorts, thus raising the race which was distributed as *G. Childsii* by an American nurseryman.

Indeed, few of the numerous growers of hardy plants know the extent to which they are indebted to Leichtlin for the introduction of many choice bulbous and tuberous-rooted plants which were quite unknown when I began gardening in 1872. At about that time Leichtlin had moved from his native town to Baden-Baden, where he had a villa situated on a steep hillside. The garden consisted of a series of small terraces, but surely so small a garden never before contained so great a number of choice plants. Leichtlin soon realised that, as he was going to do all the skilled work himself, he must be very careful in selecting his plants for cultivation. In many cases, when he had succeeded in introducing, propagating and distributing a new or rare plant, he did not continue its cultivation unless he saw a good chance of improving it by hybridisation or selection. Though he was always a comparatively poor man, he was so generous with correspondents that he was able to procure from

various countries and from the botanic and private gardens in Europe any plant they possessed. He grew a few of the choicest herbaceous and Alpine plants for his own pleasure. As a cultivator and propagator of such plants, I have never known his equal, though perhaps the late Mr. T. Atkins, of Painswick, my first instructor in horticulture, was almost as clever. The climate of Baden-Baden has a warmer and more sunny summer, and a more genial spring and colder winter than England, therefore the plants of Syria, Turkestan and Chile thrive with Leichtlin. I first visited him in 1874, and continued to do so at intervals for many years. The recollection of these visits affords me much pleasure, for Leichtlin was a man of so open-hearted, genial, and sociable a character, that, though peculiar in his habits, he was a real friend. His mode of life was very simple; he lived alone, and always went to the St. Petersburg Hotel for his meals, insisting on treating me as his guest there. On one occasion, when I expostulated at his ordering the best room in the house for Mrs. Elwes and myself, he pretended that it was his father's house, and that it made no difference to him what the rooms cost. In his garden he always worked in his shirt-sleeves and bareheaded. If I admired a rare plant, he would insist on dividing it with me, saying that if he lost it, I should send it back to him. He was "hail fellow well met" with all the coachmen and innkeepers of the country, with whom he had frequent jokes in the Baden patois, and on our drives in the forest he would stop at his friends' houses, at intervals, to taste the best wine, of which he was very fond, although he was a sober man. On his too rare visits to England he visited Kew, Glasnevin, Edinburgh, Bilton, and a few private gardens, where he was always welcome. It was a pleasure to his friends when he found a plant that he really wanted. When, in order to pay the heavy expenses which he incurred, he began to publish a catalogue and sell surplus plants, it always contained novelties which were unobtainable elsewhere. But he had neither liking nor fitness for the commercial side of horticulture, and he died quite a poor man, having been obliged to part with the valuable botanical books he had possessed in his more prosperous days.

LIST OF PLANTS IN BOTANICAL MAGAZINE
INTRODUCED BY MAX LEICHTLIN.

Year.	Tab.	Name of Plant.	Habitat.
1870	5862	Calochortus Leichtlinii	California
1871	5912	Milla capitata	"
1872	5949	Brodiea multiflora	"
—	5976	Calochortus elegans	"
1876	6264	Fritillaria recurva	"
—	6236	Milla Leichtlinii	Chile
1877	6247	Camassia Leichtlinii	California
1878	6337	Lilium cordifolium	Japan
1881	6553	Kniphofia uvaria maxima	South Africa
1882	6650	Lilium Parryi	California
—	6651	Haberlea rhodopensis	Bulgaria
1883	6716	Kniphofia Leichtlinii	Abyssinia
1884	6822	Hyacinthus azureus	Alex. Minor
1885	6823	Alum granatum (in part)	Turkestan
1886	6855	Muscari Sovietianum	Alex. Minor
1888	6994	Alum Sovietianum	Turkestan
—	7025	Iris Korolkowii (in part)	"
1890	7145	Iris sindjarensis	Armenia
1891	7181	Colchicum Sibthorpianum	Greece
—	7193	Lilium Sintenisii	Armenia
1892	7249	Pastheia cereulea	Chile (Java)
1893	7276	Iris Hookeriana	N.W. Himalaya
1895	7440	Tulipa violacea	Persia
1896	7500	Fritillaria nobilis	Armenia
—	7432	Incarvillea Delavayi	Yunnan
1897	7570	Kniphofia brevifolia	South Africa
—	7547	Lycoris squamigera	Japan
1899	7644	Kniphofia Tuckei	South Africa
1900	7740	Crocus Alexandri	Bulgaria
—	7706	Kniphofia rufa	South Africa
—	7714	Campanula mirabilis	Caucasus
1901	7791	Gladiolus sulphureus	South Africa
1902	7832	Kniphofia multiflora	"
—	7867	Iris Gatesii	Kurdistan
1903	8173	Codonopsis convolvulacea	N.W. Himalaya

He also introduced *Agave protuberans*, *Primula rosea*, *Junkaea Heldreichii*, *Ostrowskia magnifica*, *Meconopsis aculeata*, *Tecophilaea cyanocrocus*, and many species of *Tulipa* and *Crocus*. Leichtlin was the first to raise improved seedling *Aubrietias*, the best of them being *A. Leichtlinii*. *H. J. Elwes*.

MRS. GEORGE.—The wife of Mr. James George, horticultural sundriesman, died on the 10th inst., at 14, Redgrave Road, Putney, at the age of 78.

THOMAS MILNE.—We regret to record the death in Aberdeen, on September 13, of Mr. Thomas Milne, nurseryman and florist. Mr. Milne, who had reached the age of 87 years, was associated with the nursery business all his life, his father having been engaged in the same vocation. Deceased formerly cultivated land which is now covered by houses; it was then known as Glenburnie. In addition to his activities in gardening, Mr. Milne did a large amount of tree-planting. He planted the Hill of Nigg, adjacent to Aberdeen, and carried out extensive work of a similar kind in the Garioch district of Aberdeenshire. It was, however, as a successful cultivator of market garden produce that Mr. Milne was known best. He was a man of the highest integrity of character, and he possessed a genial temperament and an agreeable manner. A large number of apprentices received his tuition, and Mr. Milne's advice, counsel and example have stood them in good stead in their careers. As he was one of the oldest, so Mr. Milne was one of the most esteemed citizens of Aberdeen. The funeral, which took place on Friday at St. Peter's Cemetery, Aberdeen, was very largely attended. Mr. Milne is survived by a widow and family, one of his sons being the United Free Church minister of Knockando, whilst the other is engaged in the teaching profession. *K.*

MRS. BEDFORD.—Mr. F. Bedford, gardener to Bertram H. Barton, Esq., Straffan House, County Kildare, suffered a bereavement in the death of his wife on Tuesday last, the 20th inst. Mrs. Bedford's death followed upon a stroke, which occurred on the 5th inst.

CATALOGUES RECEIVED.

BULBS.

McHATTE & Co., Chester.
W. DREMOND & SONS, LTD., 57 & 58, Dawson Street, Dublin.
BENJAMIN REID & Co., 72, Gaild Street, Aberdeen.
JOHN JEFFERIES & SONS, Market Place, Cirencester.
JOHN McKERRICH, 35, Greenback Road, Upper Holloway (also Retarded Roots).
WILLS & SEGAR, Onslow Crescent, South Kensington.
ED. WYBB & SONS, Wordsley, Stourbridge.
WM. FELL & Co., LTD., Hexham.
KENT & BENDON, Darlington.
DOBBIE & Co., Edinburgh.
CLARK BROS. & Co., 65, Scotch Street, Carlisle.
DICKSONS, Chester.
WM. PAUL & SONS, LTD., Waltham Cross.
D. G. PURDIE, 6, Waterloo Street, Glasgow.
W. SMITH & SONS, Aberdeen.
CHARLES TURNER, The Royal Nurseries, Slough.
HOGG & ROBERTSON, LTD., 22, Mary Street, Dublin.
EDMONDSON BROS., 10, Dame Street, Dublin.
BARR & SONS, King Street, Covent Garden, London.
ROBERT VEITCH & SONS, 54, High Street, Exeter.
BROWNE, THOMPSON & Co., 86, Patrick Street, Cork.
MORLE & Co., 150-156, Finchley Road, London, N.W.

MISCELLANEOUS.

CLIBRANS, Altrincham—Carnations.
CHARLES TURNER, Slough—Auriculas, Carnations, Pinks, &c.
KENT & BRYDEN, Darlington—Carnations.
CHARLES BLICK, Warren Nurseries, Hayes, Kent—Carnations.
FRANK DICKS & Co., 68, Deansgate, Manchester—Bulbs and Roses.
ARTHUR S. RITCHIE & Co., 51, High Street, Belfast—Bulbs, Trees, and Plants.
THOMAS S. WARE, LTD., Feltham, Middlesex—Bulbs, Hardy Plants, Fruit Trees, and Roses.
HOWDEN & Co., Inverness—Bulbs and Roots.
WM. FELL & SONS, Hitchin, Herts.—Bulbs and Flower Roots.
W. SAMSON & Co., 8 and 10, Portland Street, Kilmarnock—Flower Roots.
W. EASLEY, Danecroft Rosery, Picketts Road, Eastwood, Essex—Roses.
W. WELLS & Co., LTD., Merstham, Surrey—Plants.
GEO. COOLING & SONS, Bath—Bulbs and Plants.
C. R. SHILLING, Hartley Nurseries, Winchfield, Hants.—Trees, Shrubs, Fruit Trees, Roses, &c.
AMOS PERRY, Enfield—Bulbs and Tubers, Irises, Delphiniums.
DANIELS BROS., LTD., Norwich—Bulbs, Fruit Trees, Roses.
WM. PAUL & SON, LTD., Waltham Cross, Hertfordshire—Roses.

FOREIGN.

THE DUTCH BULB AND SEED GROWERS' CO., Haarlem, Holland—Bulbs.
J. M. THORBURN & Co., New York, U.S.A.—American Tree and Shrub Seeds.
C. F. FRANCESCHI, Montatono Nursery, Santa Barbara, Cal., U.S.A.—Eugenias.
VILMORIN, ANDRIEU ET CIE, 4, Quai de la Mégisserie, Paris—Farm Seeds.
V. LEMOINE ET FILS, Rue du Montet, 134, a Nancy—Gladioli.
GEORG AREND, Ronsdorf (Rheinland), Germany—Hardy Plants.
THE JAPAN SEED & PLANT CO., LTD., near Shinjuku Station, Tokyo, Japan—Japan Seeds (wholesale).

DEBATING SOCIETIES.

WATFORD AMATEURS' & GARDENERS'.—The monthly meeting was held at St. Andrews Schools on the 9th inst.; R. A. Thorpe, Esq., occupied the chair. Mr. W. J. Pritchard, of Elstree Gardens, gave a lecture on "Preparing, Packing, and Staging Vegetable and Flowers for Exhibition."

STIRLING & DISTRICT HORTICULTURAL.—The monthly meetings were resumed on the 13th inst., Mr. Geo. Petrie, presided; the meeting being well attended. Five new members were elected. Being "Hospital Night" many flowers were brought by the members, and these were afterwards distributed amongst institutions in the town. The lecturer for the evening was Mr. Alex. Thomson, Dean Gardens, Edinburgh, his subject being "Early-flowering Chrysanthemums." His remarks were chiefly from a market-grower's point of view.

BATH GARDENERS'.—The first fortnightly meeting of the winter session was held in the Foresters' Hall, Bath Street, on Monday, September 12, under the presidency of Mr. T. Parrott (chairman). Special prizes were offered to under gardeners for the best essays on "Strawberries for Forcing." The first prize was awarded to Mr. H. Trimbe, and the second prize to Mr. E. H. Matthews.

WARGRAVE AND DISTRICT GARDENERS'.—The winter session commenced on Wednesday evening, September 14, when Mr. T. Tunbridge, of "Three Elms" Gardens, Remenhall, read a paper on "Annals," limiting his remarks to those most useful for supplying cut flowers and remaining a long time in bloom. Cultural directions as to the best soil and the methods of seed sowing were given respecting most of the subjects mentioned, which included Sweet Peas, Zinnias, Salpiglossis, Clarkia, Gaillardia, Scabious, Godetia, Schizanthus, Mignonette, Aster, Stock, Lobelia, Philox Drummondii, Petunia, Nicotiana and Grasses. A number of vases of cut blooms of many of the plants enumerated served to make the paper additionally instructive.

THE WEATHER.

THE FOLLOWING SUMMARY RECORD of the weather throughout the British Islands, for the week ending September 17, is furnished from the Meteorological Office:—

GENERAL OBSERVATIONS.

The weather was again fair and dry during the greater part of the period. Slight showers were, however, experienced in most localities, and a heavy fall of rain was reported in the south-eastern and central counties of England on Wednesday, a thunderstorm occurring in and around London on the latter on 4 the same day.

The temperature remained below the average in all districts. The highest of the maxima were recorded on the 11th except in the north and north-east, and ranged from 69° in England N.W. and 68° in several other districts to 64° in Ireland S. The lowest of the minima occurred on very variable dates. In Scotland E. (at West Linton on the 16th) the thermometer fell to 30°, but elsewhere the readings ranged from 34° in England N.E. and N.W. to 42° in Ireland S., and to 47° in the English Channel. The lowest glass readings reported were 28° at West Linton and Barmoral, 29° at Huddersfield, and 30° at Newton Regis, Burnley, Sheffield, and Llangamarch Wells, as well as at Markree Castle.

The mean temperature of the sea.—On the coast generally the water was rather warmer than during the corresponding week of last year. The means for the week ranged from 61° at Newquay, and about 60° on the east and south-east coasts of England, and at Seaford about 53° off the north and north-east coasts of Scotland.

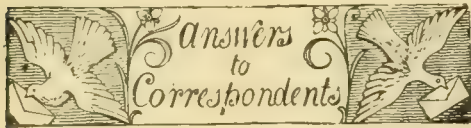
The rainfall was considerably in excess of the normal in England E., but was less than the average elsewhere, the deficit being large in the west and north. In Ireland and the north-western parts of Great Britain the total fall was less than 0.05 inch. At several stations in Scotland and Ireland, as well as at Holyhead, Aspatia, and Manchester the week was quite rainless.

The bright sunshine was less than the average over the greater part of England, but exceeded it in the north and west of Scotland, and also in the north of Ireland. The percentage of the possible duration ranged from 42 in Scotland W., 38 in Scotland N., and 36 in England N.W. to 24 in England E., and 14 in the Midland Counties.

THE WEATHER IN WEST HERTS

Week ending September 21.

A cold and unseasonable week. In the early part of the week the days were cold and the nights warm for the time of year, but the last two nights as well as the days have been cold. On the last night the exposed thermometer fell 2° below the freezing point. The ground still remains cold, the temperature at 2 feet deep being 3° colder and at 1 foot deep 5° colder than is seasonable. A third of an inch of rain fell on the 14th, but since then the weather has been dry. That the ground is also becoming dry is shown by the fact that no measurable percolation has come through either of the soil gauges for nearly three weeks. The sunshine in an average for 2 hours 8 minutes a day, which is less than half the average daily duration of bright sunshine in the middle of September. Light airs and calms have alone prevailed during the week, and the direction has been almost exclusively some northerly or easterly point of the compass. The mean amount of moisture in the air at 3 p.m. exceeded a seasonable quantity for that hour by 7 per cent. Since the beginning of the month the barometer has remained high and remarkably steady. *E. M., Lerkhamsted September 21, 1910.*



* * * The Editors will be glad to receive, for consideration, large photographs of horticultural subjects, suitable for reproduction as Supplementary Illustrations in this Journal.

APRICOTS ROTTING: *T. H.* The roots of your Apricots may have entered some unsuitable subsoil. If this is so, you must root-prune them and lay some of the principal roots nearer to the surface in some fresh soil. Place plenty of broken bricks or some similar material in the bottom of the border to ensure perfect drainage, and mix plenty of brick-rubble with the soil. Rotting is sometimes caused by such insects as flies, wasps, wood-lice and earwigs biting the fruits just when they commence to ripen. The winged insects may be trapped by placing jars of beer and sugar about the trees, and earwigs are easily caught in hollow Bean-stalks, whilst the wood-lice will conceal themselves in hollowed pieces of Potato if these are placed at the base of the trees. The rotting may possibly be due to the presence of a fungus, but this cannot be determined unless fruits are sent us for examination.

BEDDING ROSES: *A Reader.* The choice of suitable Roses is so great, it is not an easy matter to select one only of each colour. Frau Karl Druschki would perhaps grow too tall for you, but it is the best white flower, apart from the lamentable lack of perfume. White Pet is a good dwarf bedding Rose, and it continues in flower throughout the entire season. Richmond is a good red variety, and Mme. Abel Chatenay a capital pink Rose. Twelve suitable varieties for pots are as follow:—Niphetos, Sunrise, Catherine Mermet, Bridesmaid, Richmond, Kaiserin Augusta Victoria, Liberty, Le Progrès, Anna Olivier, The Bride, Caroline Testout, and Perle des Jardins.

BORDEAUX MIXTURE: *M. A. T.* A simple method of preparing the Bordeaux mixture is given in the new edition of the *Calendar of Garden Operations*, obtainable from our Publishing Department. It is as follows:—Dissolve in a large wooden or earthenware tub 2 lbs. of sulphate of copper (blue vitriol) in two gallons of hot water. Then put 2 lbs. of freshly-slaked lime into another tub with two gallons of water, so that a creamy fluid is made. Then pour the lime solution into the copper solution and stir well. Add 20 gallons of water and continue to stir. The mixture (which should be of a blue colour) is applied with a syringe or a special form of spraying machine. The latest information on Bordeaux mixture, being the results obtained by Mr. Spencer Pickering, at the Woburn Experimental Farm, is given in *Gardeners' Chronicle*, March 19 and 25, 1910.

CARNATION SPORTING: *R. L., Edinburgh.* A Carnation shoot such as you send bearing a heavy-edged picotee and a self-coloured flower is an unusual occurrence, but it is not the first instance of the kind.

CELERY DISEASED: *G. G. B., Sussex, and C. P.* The disease is caused by the fungus *Septoria Petroselinii* var. *Apii*. Spray with the Bordeaux mixture. Next year, spray before the damage is done; it will save the foliage, and the mixture is quite safe to use. Do not plant Celery on the same ground for a season or two. The disease appears to be very common this year.

CHALK AND POWDERED STONE: *Selwood.* Chalk would not benefit Violets greatly unless the soil was inclined to be sour. Wood ashes are usually obtained from garden fires; they contain a considerable quantity of potash. With regard to the value of decayed Broccoli or Cauliflower leaves as manure, beyond supplying humus, they would have no very high manurial value. Powdered stone would, in some cases, supply lime. Chalk may be obtained from the builders' merchants. Your best plan is to obtain a copy of *Chemistry of the Garden*, by H. H. Cousins, price 1s. 1½d., free by post. We do not know the gentleman to whom you refer.

CREOSOTE ON PLANT STAGES: *A. W.* Open the ventilators to the fullest extent and keep the house as dry as possible. Cover the staging with fine, dry ashes, soil or sand, and replace it with fresh after a few days. In a week or two the effects of the creosote should be considerably lessened. It would be advisable to place a thick layer of sand or ashes on the stages when the plants are housed, replacing it at intervals. We do not undertake to reply by post.

DOUGLAS FIR: *H. R.* The "gouty" outgrowths are caused by an insect allied to *Chermes*, which causes American blight in Apples. Petroleum emulsion, if applied vigorously, might do good. Cut out and burn the affected branches as far as possible.

FELLOWSHIP OF THE LINNEAN SOCIETY: *R. B., Cawnpore.* Every candidate for admission to Fellowship of the Linnean Society must be proposed by three or more Fellows, who must state his qualifications, name in full, rank, profession, and residence. Before a candidate is proposed, it is the duty of the proposer to make known to him that, if elected, he cannot be admitted until he shall have paid the admission fee of £6, and one annual contribution of £3, and he may compound at any time by one payment of £45, in lieu of all future annual subscriptions; but if he be not usually resident in Britain, the composition of £45 must at once be paid, or an order given upon a London agent for the payment of the annual subscriptions as they become due. Every person elected a Fellow is required to appear personally to be admitted, within six months after his election, or within such further time as, upon special application, the Council may grant. The general meetings of the Society are appointed to be held on the third Thursday in January, the first and third Thursdays in February, March, and April (no meeting in the week before or after Easter), the first Thursday in May, and on the first and third Thursdays in June, November, and December, at eight o'clock in the evening; and any member may introduce a friend, by inscribing his name in the list of visitors. The anniversary meeting for the election of Council and officers is held at 3 p.m. on May 24, or on the following day, if the 24th should happen to be a Sunday or Bank Holiday.

GRAPES UNSATISFACTORY: *A. W. P.* There is no disease in the bunches. The berries have failed to "finish" properly, because of some unsuitable conditions, which only those on the spot can determine.

LILAC AND LABURNUM: *A. B.* What you take for a Laburnum is *Piptanthus nepalensis*. The large terminal bud would most probably furnish a flower spray next season. The top buds on the Lilac shoots may develop flowers, but much will depend on the season, which, so far, has not been favourable to the wood ripening.

LIME ON PASTURE LAND: *W. H.* Ground lime, unslacked, acts beneficially on the humus of pasture land at once, by virtue of its caustic properties. The lime quickly absorbs oxygen and moisture from the atmosphere, and then becomes converted into carbonate of lime. The first heavy rain washes the lime into the turf of the pasture, but it descends very slowly into the soil, so that the full effect of a dressing of quick-lime on grass land is seldom seen until the second year after application.

NAMES OF FRUITS: *F. C. P.* Pear, probably Williams's Bon Chrétien; send another fruit if possible, as the specimen was damaged in the post.—*T. S.* Apple Duchess's Favourite.—*E. K.* Plums, (yellow) Jefferson, (red) Pond's Seedling.—*H. J.* 1, Lord Derby; 2, Harvey's Reimette; 3, Grenadier; 4, Lord Suffield.

NAMES OF PLANTS: *A. B. H.* 1, Clematis Viti-cella alba; 2, Helium autumnale cupreum; 3, Erodium cheilanifolium; 4, Senecio clivorum; 5, Sedum maximum; 6, Eupatorium purpureum; 7, Dianthus chinensis var.; 8, Vitis, sp. not recognised.—*R. Middleton.* 1, Helium autumnale grandiflora; 2, H. a. striatum; 3, Helianthus rigidus; 4, Boltonia asteroides decurrens; 5, Aster dumosus. *B. A.* 1, Statice latifolia; 2, Lonicera sempervirens; 3, Eonymus europæus; 4, Nepeta Mussini; 5, Geranium sanguineum.—*J. McKay.* Callistephus hortensis (annual).—*F. A. E.* Tropæolum canariensis.—*J. A. J.* Escallonia monte-

vidensis (syn. floribunda).—*T. H. H. and Tom Coker.* We do not undertake to name varieties of Dahlias, or other varieties of florists' flowers.—*G. P.* Send the Chrysanthemums to some grower who has means of comparing them with his named plants.—*Bide, Farnham.* Lotus Tetragonolobus.—*S. & Co.* Garden seedlings of *Oenothera* (*Godetia*) *amœna*.—*H. Jones.* A species of *Encephalartos*, probably *E. Hildebrandtii*.—*Foreman.* *Chironia lincides*.—*W. R.* The variety of *Kerria japonica* in your garden is the variegated form. Probably the typical form was not planted.—*W. P.* 1, *Strelitzia Regina*; 2, *Polygonum Baldschuanicum*.—*R. A.* 1, *Oncidium cheiroporphum*; 2, *Pleurathallis rubens*; 3, *Ocmeria diaphana*; 4, *Masdevallia simula*; 5, *Odontoglossum odoratum*; 6, *Bifrenaria aurantiaca*.—*L. G. P.* *Bignonia capreolata*.—*A. W.* 1, *Ceanothus azureus*; 2, *Hypericum patulum*; 3, *Adonis æstivalis*; 4, *Thalictrum minus*; 5, send again when in flower.—*A. C. J.* 1, *Coelogyne Massangana*, so far as we can judge by the two withered flowers received; it should have a long, pendulous raceme of flowers; 2, *Hyoscyamus niger* (*Henbane*); 3, *Jasminum gracile*.—*H.* *Bulbophyllum grandiflorum*.—*P. H.* *Catasetum maculatum*.—*P. D. Herault.* The Vanda is the variety you name. The plant would probably root better if you kept it cool during the winter, and put it in the warm house again early in the spring of next year.

NETTARINE: *W. C.* No disease is present, and the trouble must be looked for in some other direction. Probably immature wood is responsible.

PEACH WALBURTON'S ADMIRABLE: *T. H.* Although this variety is grown successfully in some garden, it is a partial failure in others. It frequently sheds many of its flower buds during winter and early spring, and later, just prior to the stoning process, the fruits usually drop very freely. You will do well to replace it with a more reliable sort. Marchioness of Downshire, Princess of Wales and the new variety Peregrine are all excellent late-fruiting Peaches.

ROSE LEAVES: *Enquirer, H. W., and T. S.* The Rose leaves are affected with the rust fungus, *Phragmidium subcorticatum*. The disease is at the uredospore stage, but in the spring, powdery, orange-coloured patches are formed. Spray the plants with dilute Bordeaux mixture or ammoniated carbonate of copper solution. Collect and burn all the fallen leaves this autumn, and in the spring spray the plants before the buds expand with sulphate of copper at a strength of 2 ounces in 3 gallons of water.

SAND GARDEN: *R. R., Birkdale.* Instead of placing the material from the cess-pool at once into the holes, it will be better to form a heap on the level mixing some garden soil along with the cess-pool's clearings. The heap should be turned over occasionally, and a little lime mixed with it. After a few months the compost might be used with advantage for most garden crops.

SEEDLING CARNATION: *A. E. H.* The variety possesses little merit, and is no advance on others already in cultivation. We do not undertake to reply by post.

SWEET PEA SPIKE WITH SEVEN FLOWERS: *G. H. L.* This is not a record. Specimens have been sent us bearing more flowers than this. See also *Gard. Chron.*, August 14, 1909, p. 118.

VINE LEAVES WITH WARTY GROWTH: *A. F.* The warts are not due to disease, but are outgrowths caused by an excessive amount of moisture in the atmosphere. The humid condition of the house, with, probably, a rich supply of food, have caused an abnormal development of leaf-tissue, so that intumescence has resulted. Maintain drier conditions and open the ventilators freely.

Communications Received.—*F. K.*—*W. H. Y.* *J. D.*—*G. M. T.* *P. K.*—*H. S. T.* *G. W. L.* *W. S.* *A. W. P.*—*W. G.*—*P. A.*—*Industrial Horticulturist*—*W. A. C.*—*A. P.*—*D. R. W.*—*J. O.*—*R. A. W.* *J. D.*—*R. F.* *Eggbaston*—*R. P.*—*Chloris*—*J. J. W.*—*A. R. H.*—*F. M.*—*W.*—*F. J. F.*—*E. B.*—*C. T. D.*—*C. E.* *Stevenage*—*W. S. B.*—*A. D.*—*T. S.*—*J. C.* *Surrey*—*W. F.*—*J. M.* *Bieton*—*J. D. G.*—*W. F. G.*—*J. T.* *Surrey*—*E. T.* *F. F.*—*W. F.* *Frome*—*W. M.*—*W. F.* *Yorks*—*T. B.* *Lorraine*—*F. W. M.* (with thanks) *J. E.* *J. E. M.* *C. H. C.*—*W. W.*—*M. W.*—*E. B.* *J. S. F.* *Mrs. Markham* *A. H. C.* *S. A.*—*W. K.*—*H. R.* *H. B.*—*F. R. B.* *New York*—*H. W.* *Redruth*—*A. C. B.*—*J. A. X.*—*F. J. C.*



Photograph by W. J. Vasey.

VIEW IN THE GARDENS AT HOLLAND HOUSE, KENSINGTON.



THE

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IRIS NEPALENSIS AND ITS
NEIGHBOURS.

THE name nepalensis was apparently first applied to an Iris by D. Don in his *Prodromus Flora Nepalensis*, which was published in London in 1825, and the description there given of the rootstock as resembling that of a Hemerocallis leaves little doubt as to the identity of the plant described. Confusion has, however, arisen with regard to the name because it seems to have been given by Wallich to a fine form of *I. germanica* with concolor blackish-red flowers, which is also a native of Nepal. The latter has been sent to me direct from that country, and is obviously identical, except in colour, with the common European type of *I. germanica*. Further confusion has been brought about within the last two or three years by the action of an Indian botanical garden, which distributed, under the name of nepalensis, some plants of *Iris tectorum*, which were obtained from the Shan Hills of Burma in mistake for a species akin to *I. nepalensis*, to which reference will be made later.

The rootstock of the true plant in its resting state consists merely of a bud or growing point surrounded by the fibrous remains of old

leaves, and having attached to its base about half-a-dozen whitish, tuberous roots, which are usually cylindrical, of about the diameter of a goose-quill. Sometimes, however, these roots are swollen towards their lower ends, but whether this peculiarity is the mark of a local variety or merely the effect of the nature of the soil in which the plant has been growing, is still a matter of conjecture. At any rate, these swellings are conspicuous on the roots of a number of plants, which I received from a Nepal valley to the north of Katmandu, whereas there is no sign of them either on a root from the neighbourhood of Simla or on the 30 or 40 seedlings that I have raised from the Simla plant. My original plant has now survived four seasons here, and has flowered regularly for the last three years. I have found it best to lift the plants when the leaves wither in October, and store them, for the winter, under cover in dry sand. At the beginning of March they are planted out in a soil of peat, leaf-mould and old cow manure in a somewhat sunken position, where watering can be done easily if there is drought.

Iris nepalensis is peculiar in many ways. It is by far the latest of all to appear above the ground, for there is no sign of it until about the beginning of June. Once, however, the slender point of the leaves is through the ground, growth is so rapid that the flowers open about the middle of July. The colour is a pale lavender produced by light violet veins on a whitish ground. All the six segments are of a delicate texture, and droop at about the same angle. The falls bear a yellow crest, which is divided up into fine hair-like points, and it is a pity that the individual flowers are so fugitive that they open and fade in the course of the same day. In respect of its seeds also, *I. nepalensis* stands by itself. The seed proper, which is more or less spherical, has attached to it, along one side and projecting at either end, a kind of wing-like appendage of much lighter colour than itself. The seed, I find, germinates very readily about the time when the mature plants begin to make visible growth. At the end of their first season, the young plants consist of two or three small, whitish tubers attached together at the apex.

The home of this Iris is on the southern slopes of the Himalaya, at any rate, from Simla to Nepal, and its range appears to be continued far to the east, for it is abundant in Western Yunnan, where it has been collected in recent years by the Abbé Ducloux, and also by Messrs. Forrest and Wilson. The curious appearance of the tuberous roots in the dried herbarium specimens collected by the first-named misled a French botanist into describing this Iris as *I. yunnanensis* of the *Hermodactylus* section, of which the Southern European *I. tuberosa* is the only representative. But this name can only rank as a synonym of nepalensis. The roots are in no way similar to the tubers of *I. tuberosa*, which are rather rhizomes than roots in the strict sense.

Reference has already been made to a Burmese Iris. This is a plant of the same nature as the type *I. nepalensis*, differing chiefly by the fact that the flowers are practically sessile, while the stem of nepalensis is 6-12 inches in length. The dwarf plant is also much more floriferous, and was named *Collettii*, after its discoverer, Sir Henry

Collett. It appears to be identical with Sir Michael Foster's Letha variety of nepalensis, which came from the Letha range in the Shan Hills. Curiously enough, this plant also occurs in Yunnan, where it has been collected by the same three botanists. It has also been rebaptised in France as *I. Duclouxii*, and also wrongly described as a *Hermodactylus*. Unfortunately, this plant is not apparently in cultivation, but it was Foster's experience that it was vastly easier to manage than *I. nepalensis* itself, and, as it is very floriferous, its re-introduction is certainly to be desired.

At first sight these two Irises appear to stand quite apart from all others, with no connecting links, which might represent stages in the transition to another group. There exists, however, in Western China and Thibet, a small class of three Irises, *tigridia*, *Bunge*, *pandurata*, *Maxim.*, and *Potaninii*, *Maxim.*, not one of which, unfortunately, is known to be in cultivation, so that we have to fall back for information on herbarium specimens, which, in the case of Irises and other monocotyledons, are seldom entirely satisfactory. All these three species agree in having roots of a special type intermediate between those of an ordinary bearded Iris, and the tubers of nepalensis. This feature separates them at once from the western species, which they, in other respects, most closely resemble, namely, *pumila*, *rubro-marginata*, and *chameiris*. It is just possible that this small group does really represent an intermediate stage between nepalensis and *Collettii* and the ordinary pogoniris.

I. pandurata is only differentiated by Maximowicz from *I. tigridia* by the fact that its spathes are two-flowered, but specimens from the natural habitat show that both one and two-flowered stems are borne by the same individual plants, and it seems probable that it is really only a strong-growing local variety of *I. tigridia*. The latter has a stem of some 4 inches in length, and purple flowers with a variegated beard. *I. Potaninii* is stemless, with a lengthy, tapering tube, as in the true *I. pumila*, and the flowers are usually, if not always, yellow.

I. Potaninii, on the contrary, is probably entitled to the distinction of being the species that has reached the greatest elevation of the whole genus, for it grows on the tops of passes in Central Thibet at the height of 16,300-17,800 feet. The flowers of Thorold's specimens, gathered in 1891, were so imperfect that a new *Iris* Thoroldii, of the *Apogon* section, was published by Baker in Hooker's *Icones Plantarum*, No. 2,302, but others gathered in 1892, by Rockhill, show the beard quite clearly, and appear identical with Potanin's specimens from Kansu and Przewalski's from Northern Thibet. Among the latter there occurs the purple-flowered form, which seems always to be found sooner or later among those species of Irises in which yellow flowers predominate.

If these species are eventually brought into cultivation, it may well be that fuller knowledge of them will show that their affinity to *I. nepalensis* is not as close as dried herbarium specimens seem to indicate; and now that so many new plants from Western China are making their way into our gardens, may hope to obtain these interesting Irises. W. R. Dykes, Charterhouse, Godalming.

NOTES FROM A "FRENCH" GARDEN.

A PORTION of the spent manure from the old Melon, Cucumber and other hot beds, should be sifted well and stored in a shed or other shelter ready for use during wet weather. In new gardens, where the ordinary soil has been used for the crops in the frames, it will be noticed in many instances that the manure is not thoroughly decayed. This is due mainly to the thick layer of soil preventing the air from reaching it. In such cases, the grower should turn over the manure as often as possible to have it in a good condition for use in the spring. The surplus of the decayed manure, intended for top dressings in the open ground next season, should be stacked in small heaps to prevent a second fermentation, which would cause souring. The beds intended for growing the seedling Lettuces and Cauliflowers are ready for planting, and the cloches, having been cleansed thoroughly, are arranged in their positions. The first sowing of Lettuce "Little Gott" (white or black seeds) should be made on October 1. The Cos Lettuces, White, Green, and Grey of Paris, and Passion Lettuce are sown in the order named at regular

quarters, allowing four plants for each cloche. The bed is first top-dressed heavily with well-decayed manure. This batch must be grown very hardy, and ventilation must be afforded whenever possible. The Onions are now being planted out. The beds must be levelled well to facilitate the pricking out of the plants as they are extremely small. They are set very close, and the soil is made firm about the roots. *P. Aquatilis*.

TREES AND SHRUBS.

FEIJOA SELLOWIANA.

IF the flowers of this shrub, which open in this country, possessed the colouring attributed to them in Nicholson's *Dictionary of Gardening* they would be gorgeously beautiful. But, although they fall short of this, no other wall shrub, except perhaps the Pomegranate, bears such interesting and showy flowers as those of Feijoa Sellowiana. The solitary, axillary Myrtle-like flowers are considerably larger than those of the common Myrtle, and they are

tree, there are very few places in these islands where it could be grown in this way with any likelihood of success, therefore the protection of a wall is essential. The fruit, which does not seem to ripen under cultivation, is described as being yellowish-green, egg-shaped, Guava-like, richly perfumed, and of a delicious, aromatic, spicy flavour. *A. C. Bartlett*.

COLCHICUM VERATRIFOLIUM.

AMONG the finest of the Colchicums, or Meadow Saffrons, is one which was distributed from the Continent under the name of *C. veratrifolium* (see fig. 97). It does not differ much from some of the forms of *C. speciosum*, but it comes earlier into flower with me than any of these, being in succession to one I grow as *C. Bertolonii*, which is the earliest in my garden. *C. veratrifolium* has large and handsome flowers about the size of *C. speciosum*, but darker-coloured than the fine variety of that species known as *rubrum*. The foliage is large and handsome, resembling in general character *A. veratrum*, but less massive.

Like other Colchicums, this plant seems to prefer a rather heavy soil, and it succeeds well in grass, in the wild garden, and in the border. Colchicums should not be planted in any place to which cattle have access, as the plants are poisonous. The flowers appear to be poisonous even to bees, or, at least, they have such a narcotic effect upon them that many bees die if they happen to remain on the flowers for any length of time. The value of these large-flowered Meadow Saffrons for the decoration of the garden in autumn is not sufficiently well known. *S. Arnott*.

NOTICES OF BOOKS.

ROCK GARDENS.*

THE cult of the rock garden is a fashionable one just now, and many books have been written, rather, it would seem, with a view to the profit of the author and publisher than for the would-be rock gardener. Mr. Meredith's book does not belong to this—unfortunately large—class. It is safe to say that it is one of the best of the really practical works which have been written, and we can cordially recommend it to everyone who is embarking, or has already embarked, on this fascinating branch of horticulture.

The fact that Mr. Moore, of Glasnevin, has contributed an introduction is enough to awaken favourable anticipations in the reader, nor will he be disappointed on a closer acquaintance with its author. An essentially practical treatment pervades the whole, and the writer is describing what he knows at first hand. The hints as to construction of rock and bog gardens are reliable, and the guide to an estimation of the cost likely to be incurred ought to be appreciated.

The chapter on propagation will be read with interest by many who are apt to be alarmed by the prices of Alpines as indicated by catalogues, and the cultural directions strike us as apt and to the point.

The second part of the book contains "lists" of plants suitable for different situations, but it must not be thought that the author has been content merely to give a string of names to answer this purpose. Many of the notes attached to the species are of considerable value, and if Mr. Meredith's suggestions fail to command the assent of everyone who has himself grown the plants, it must be remembered that Alpines are "kittle cattle," and what may prove suitable

* *Rock Gardens: How to Make and Maintain Them*, by Lewis B. Meredith; with an introduction by F. W. Moore. Williams and Norgate, 1910. Price 7s. 6d. net.



FIG. 97.—COLCHICUM VERATRIFOLIUM HORT.: FLOWERS RUBY-RED.

intervals till October 10. The seeds are sown at the rate of about 800 to 900 seeds per cloche, and they are covered with a thin layer of fine soil. No watering is necessary, but it is advisable to shade the cloches with a mat during bright sunshine. The seedlings should be pricked out as soon as they are large enough to handle. Thirty plants per cloche are sufficient; indeed, better results are obtained with 24 plants under each cloche, especially in the case of the variety White Passion. The beds for the Cauliflowers must be prepared as soon as possible for the plants which are now pricked out in frames, about 250 plants per light. When preparing these beds, the grower must bear in mind that they will not be shifted till late in March. When a second sowing of Cauliflowers is contemplated this can be made similarly to the first, but the lights must be kept closed till germination is well advanced. The Spinach raised six weeks ago has been thinned, and the soil hoed. The largest leaves will be removed during the next 10 or 12 days, as they are liable to be attacked by mildew during November. Lettuce "Little Gott" sown late in August is now ready for shifting into its final

borne on longer stalks. The century supplement of Nicholson's *Dictionary of Gardening* describes the flowers as having their petals fawn-coloured outside, and purplish-crimson within. No mention is made of the numerous stamens, which have bright yellow anthers mounted on long, brilliant-red filaments. All the flowers I have seen have white and very much reflexed petals, but probably the sunshine of Brazil develops the brighter colouring of the flowers in that country. Even if the shrub did not bear attractive flowers it would be well worth growing for its handsome, deep-green leaves, which, on a healthy specimen, are fully 3 inches long. The best plants I have seen were grown in yellow loam, and were trained against a southern wall. Under these conditions the species made fine, healthy branches. They require liberal waterings during hot, dry weather until the beginning of August, from which time attention should be paid towards ripening the growth already made; otherwise the plant is almost certain to be injured by the first severe frosts. Although the natural habit of Feijoa is that of an erect shrub or small

treatment for them in one locality may lead to disaster in another, where climate and other conditions are different. We note that he recommends culture in light, sandy soil for *Potentilla nitida*. We have ourselves found that a calcareous medium with peat and leaf-mould give the best results, and, as the plant is a limestone one, occurring abundantly both in the Dolomites and in other calcareous mountain ranges in Europe, for example, the hills south-west of Dauphiny, this would seem to accord better with the natural conditions under which the plant flourishes. Again, although *Primula farinosa* is said to grow best in shade, this charming sub-Alpine is generally met with in the moist Alps, and in the north of England in the open, high meadows which correspond to them, exposed to the full sun. Accord-

THE PHYSIC GARDEN, CHELSEA.

THIS old-world garden has been much altered and improved since the advent of the 20th century. In fact, but for the arrangements of the long parallelograms of the beds of plants being after something of the same pattern as I remember them for the last 50 years, the place is scarcely recognisable, so greatly has it improved since the appointment of the present curator, Mr. William Hales, in 1899. The dilapidated glasshouses have been removed and replaced by a number of commodious, span-roofed greenhouses and stoves, together with their complementary brickpits, which must soon be increased in number if the collection of plants is to be much augmented, for even now there is considerable overcrowding to be observed in some of them. There

Chelsea from Lord Cheyne in 1712 (the Physic Garden being part of the estate), and in 1722 he granted it to the Apothecaries in perpetuity on certain specified conditions.

Climatic conditions had not improved with the extension of London, and the Apothecaries' Company became desirous of getting rid of what had become a costly anachronism; but the condition of Sir Hans Sloane's bequest rendered any such alienation extremely difficult, as it provided in the conveyance that, in case of failure to keep up the premises as a physic garden, and to send 50 dried specimens of distinct plants grown in the garden annually to the Royal Society, the same should pass to the latter body, and, failing them, to the College of Physicians. In 1897 the suggestion was made that the garden should be purchased and preserved as an open



FIG. 98.—THE PHYSIC GARDEN, CHELSEA.

[Photograph by H. N. King.]

ing to our own experience, given the appropriate conditions of soil moisture, far finer flowers are produced under full exposure to light than in partial shade.

We note that the origin of *Saxifraga Boydii* is given as the result of a cross between *S. areoloides* and *S. Burseriana*. There is, however, some doubt as to this, and Mr. E. H. Jenkins has maintained, with some show of probability, that the real parents were *S. Burseriana* and *S. Rocheliana* (see *Gardeners' Chronicle*, vol. xli., p. 95).

There are a few obvious slips in the text, e.g., where *Sarracenia* is called an Orchid (p. 342), but they do not seriously detract from the merits of one of the best books on Alpines and their cultivation which we have seen.

appears to be a large increase in the species of medicinal and commercial plants, and of species used in the lecture-room by the botanical demonstrators. This gratifying fact testifies to the increasing usefulness of the garden as a teaching centre. The laboratory is well supplied with apparatus for experimental work, and is light, large, and lofty.

In the open-air beds (see fig. 100), cleanliness and orderliness are everywhere apparent, and the numerous genera, species, and varieties of plants grow with as much luxuriance as is compatible with the climatic conditions prevailing in London. The land on which the garden is laid out was leased to the Apothecaries' Company from Charles Cheyne (afterwards Lord Cheyne) in 1673. Sir Hans Sloane purchased the manor of

space by the parish, as a local commemoration of the late Queen Victoria's reign; but it was stated on high legal authority that even if the three societies should agree to such a course, it would be incumbent on them to obtain the highest possible value for the land as a building site, and devote the proceeds to some objects in accordance with the spirit of the original bequest. Fortunately, however, means were found whereby this interesting old garden could be continued, under the City Parochial Foundation Trustees, and, with modified conditions as an open space, in accordance with the spirit of its original foundation.

Of the four Cedars of Lebanon planted in 1633 (see *Gard. Chron.*, Aug. 25, 1900, fig. 42), two were cut down in 1771, their timber, though

decayed, realising £23. The third died in 1878, and the last of them was taken down a few years ago. In 1793 the girth of the two that then remained was, respectively, 12 feet and 13 feet, at a height of 3 feet.

The statue of Sir Hans Sloane (see fig. 99), by Michael Rysbrach, still stands in the middle of the garden. It was erected by the Apothecaries' Company, "with grateful hearts and general consent," and is a good example of its kind. The annals of the garden, from its first mention in the archives of the Society of Apothecaries, in 1673, down to 1820, were carefully collected by Henry Field, one of its members, and printed by the Court in the latter year. They contain biographies of the principal demonstrators and gardeners, with many particulars of plants, glass-houses, wharf, barge-house, and other features. *P. M.*

NURSERY NOTES.

MESSRS. WALLACE & CO., COLCHESTER.

(See Supplementary Illustration.)

KILNFIELD GARDENS, the name of the nursery grounds of this firm, are within almost a stone's throw of the station of the Great Eastern Railway Company. The numerous brick fields in the neighbourhood at once give the clue to the name of Kilnfield Gardens, and also to the nature of the soil. The nursery proper, constituting the older portion of the establishment, is situated on slightly rising ground, approached by a level crossing over the railway. The ground slopes on the south side towards the bed of the river Colne; in the meadows between the railway and the stream, Messrs. Wallace have acquired additional land, and they have formed a water and bog-garden along the banks of the stream.

Late summer finds a wealth of showy plants in bloom. Many, such as Pentstemons, Michaelmas Daisies, Phloxes, Gladioli, Rudbeckias, Montbretias, Erigerons, and Liliums, are in great masses, presenting fine sheets of colour. Others of rarer and choicer species, including many Alpine gems, are grown in frames or small unheated houses. They do not need protection from cold, but a little shelter from excessive rains is an advantage for propagating purposes. These frames are constructed very simply, the majority having sides formed of old railway sleepers. Others are merely open beds, extra well drained, and with stone boundaries. In one of the frames we observed, on a recent visit, a collection of rare Saxifragas, including *S. florulenta*, *S. Probynii*, *S. Petrachii*, *S. Boydii*, *S. Stribnyi*, *S. Pauline compacta*, *S. latina* and *S. Ferdinand Coburgii*. *Viola hederaceæ* was in flower, the blooms being deep purple tipped with white; unfortunately, the plant is not perfectly hardy in this country. A form of *Linaria pallida* with extra large blooms was conspicuous. A fine batch of *Iris albopurpurea* var. *colchesterensis*, which received an Award of Merit from the R.H.S. on June 25 last, has been cultivated from three tiny seedlings. *Lobelia linnæoides* is a rare New Zealand species with creeping stems. *Daphne rupestris* is a difficult plant to cultivate, but there was seen a good batch of it, and another of *Erodium chrysanthum*, which has rosettes of grey, pinnate leaves, and bright yellow flowers. *Tanakea radicans* forms a neat trailing plant, with flowers like white plumes. *Sedum brevifolium* had the appearance of beads strung together, so closely are the globular leaves set on the stems. A hybrid *Campanula*, *C. Stansfieldii*, was observed in bloom, the bells being a fine blue colour, and large in comparison with the size of the plant. *Morisia hypogæa*, *Lychnis Lagasceæ*, bearing pink blossoms; the

scarce *Gentiana bavarica*, *Dracocephalum botryoides*; *Michauxia Tchiahatcheffii*, *Wahlenbergia graminiflora*, *Dianthus calapinus*, *Hypericum reptans*, with pale-yellow flowers, *Alyssum Moellendorffianum*, the yellow flowers showing well against the pretty grey foliage; *Dianthus neglectus* and *Achillea Kelleri*, with foliage like a *Santolina*, are a few of the more interesting subjects noticed. In open beds were seen *Campanula pusilla*, still in flower, being one of the latest of its race in bloom, although commencing in July; *Berberis Wilsonæ*, a charming shrub, bearing coral red berries; *Perowskyia atriplicifolia* (Russian Sage); *Haplocarpha scaposa*, like a glorified Dandelion; *Achillea ageratum*, bearing heads of yellow blossoms; *Phyteuma campanuloides*, with mauve-lilac petals; *Potentilla alba*, like a *Lupin* in leaf, and flowering late in the season; *Veronica exaltata*, resembling a large form of *V. spicata*, with a showy spike of blue flowers; *Potentilla arguta*, having creamy, yellow blossoms, and *Acanthus spinosus*, a dwarf species with handsome, Thistle-like foliage.

Kniphofias form one of the specialties of the

compare with *Aster Amellus* and its forms, such as the lovely *Bessarabicus* (blue) or *Riverslee* (carmine). Other beautiful varieties are *Hilda Morris*, with striking blue flowers; *Decima*, a fine white form; *Mme. Gauchault*, rosy pink; *Beauty of Colwall*, of the *Novi Belgii* section, with double flowers, of a charming blue shade; *Thompsonii*, quite distinct from other varieties, blue-flowered; *Ringdove*, of the *A. ericoides* type, with sprays of light-blue flowers; *Maidenhood*, with white Daisy-like blooms; *Star Shower*, another pretty white variety; *Daydream*, *Novelty*, *Prosperine*, *Captivation*, *Perry's Favourite*, pink; *Ideale*, *St. Egwin*, and *Lil Fardell*.

Amongst *Pentstemons* *Myddleton Gem*, pink; *Southgate Gem*, scarlet; and *Newbury Gem*, carmine-red, are all good, whilst *Killermanii* is a fine purple variety, excellent for massing. *Gregor Mendel* has maroon flowers and dark-coloured stems, the spike being very large. It was too late to see the collection of *Iris* in bloom, but one, *Mrs. Alan Gray*, had lingered in flower, and was giving a touch of



FIG. 99.—VIEW IN THE CHELSEA PHYSIC GARDEN, SHOWING THE MONUMENT TO SIR HANS SLOANE.

firm, and they have some remarkably showy hybrids between *K. multiflora* and *K. Nelsonii*. The flowers of the seedlings range from almost white to coral red. There are also seedlings from *K. rufa*, and these were blooming for a second time this season, the first flowers being produced in July: the variety *Gold Elsie*, which obtained an Award of Merit from the R.H.S., one of the finest. *Erigerons* are showy plants, and the variety *Quakeress* is an improvement on the old *E. speciosus*. A large batch of *Rudbeckia Newmanii* was in bloom; this beautiful perennial should be cultivated in all gardens; it is especially valuable for furnishing cut blooms. The darker-flowered forms of *Sedum* spectabile include the variety *atropurpurea*. *Sedum maximum* is another useful garden species, the spikes of rosy flowers with red centres being very pretty. The dwarf form of *Polygonum cuspidatum*, known as *compactum*, makes a fine subject for the water-side; several large beds were white with their axillary inflorescences. The blooms turn pink with age, and in the spring the growths are tinted red. The perennial *Asters* were at the height of their season. To our liking nothing can

blue colour. *Eryngium tripartitum* was coloured blue from its summit to the ground level, stem and flowers alike. The plants, seen in the mass, were very effective, and it is also of value for decorative purposes. Some of the autumn-flowering *Crocuses*, such as *Colchicum speciosum* and its much-improved variety *Aitchinsonii*, also *C. ciliatum*, were expanding their pale-blue flowers, and some seedlings gave the impression that they were hybrids of these.

Gladioli in large beds, including the popular blue-shaded varieties, of which *Baron Jules Hulot* was at its best stage of flowering, were still showy. The hybrids of *G. primulinus* are characterised by soft tones, mainly self colours, in which the yellow of *G. primulinus* has toned down the reds and purples. These are especially effective by the water-side, where they are as charming as Japanese *Iris*es earlier in the season. It is feared that they are not sufficiently hardy to withstand the winter in this country, but some plants will remain to test this.

Of the *Kniphofias* we have already spoken, but in the lower nursery were large numbers of species and seedlings. The small-growing

K. breviflora has a spike of yellow flowers, but those of *K. Nelsonii* are as red as sealing-wax. Messrs. Wallace are selecting forms with glowing orange-red inflorescences. The newer Montbretias are cultivated in great numbers, including Hereward, Prometheus, Norvic and others, raised at Westwick Gardens by Mr. Geo. Davison.

In one corner of these lower gardens is a collection of shrubs suitable for planting on rock-gardens. We can only enumerate some of the more striking, such as *Berberis Darwinii* nana, *B. dulcis* nana compacta, hybrids of *B. stenophylla* and *B. Wallichiana*, *Abies pumila* pygmaea, *A. Remontii*, *Amygdalis nanus*, *Genista anxanatica*, *Ericas* in variety, *Veronica epacridea*, very distinct, *V. cupressoides*, *V. Armstrongii*, *V. salicornioides*, *Thuja occidentalis* Little Gem, *Retinospora leptoclada*, *Pinus sylvestris* *Beuvronensis*, *P. s. globosa*, *P. Cembra*, *Pernettyas*, *Olearia stellulata*, *Juniperus sabina* prostrata, *J. s. tamariscifolia*, *Hypericums* in variety, *Gaultheria procumbens*, *G. nummularia* and Alpine *Rhododendrons*. The boundary to this part of the nursery has a dry wall that is planted with a variety of suitable species, and beyond is the water garden. This has been altered somewhat since our last visit, and now, instead of a series of oblong ponds, an irregular lake and stream give a less formal appearance. On a bright autumn day the scene in this water-garden is enchanting. Most of the flowering plants were over, but some will prolong the season of blossom until the approach of winter. Nothing is more handsome just now than the hybrids of *Gladiolus primulinus* referred to. These, with clumps of *Mimulus luteus*, *Lobelia cardinalis*, *L. syphilitica*, *Senecio tanguticus*, *Cimicifuga simplex*, *Myosotis*, *Anemone japonica*, *Trollius caucasicus*, *Nymphaeas*, *Ranunculus lingua*, *Primula pulverulenta*, *Spiraeas* and *Astilbes*, were the principal subjects in flower. Overhanging these were the tall seed-vessels of those whose glories had beautified the scene earlier, in a setting of brown foliage. Rushes, Reeds and Grasses seemed to bar the way everywhere, and the general effect was wild but beautiful.

THE SUPPLEMENTARY ILLUSTRATION.

Messrs. Wallace's exhibit at the last Holland House Show (see illustration), took the form of an old English border, associated with water-gardening. In the top of the picture is seen the raised flower border, with a retaining wall in front and a paved walk. In the centre was a recess with a stone seat, and the plants at this spot were all sweet-smelling species. At the back of the border were spikes of *Eremuri*, principally hybrids of *E. Bungei* and *E. Olgæ*; raised by the late Sir Michael Foster, tall *Delphiniums*, *Iris*es of the aurea and gigantea types; *Liliums* in variety, including *L. Szovitzianum*, *L. Hansonii*, and *L. pardalinum*, together with a selection of early summer flowering perennials. In the crevices of the wall were *Campanulas*: *C. garganica*, *C. g. alba*, *C. pusilla*, *C. p. alba*, and *C. turbinata* grandiflora, *Dianthus*es of sorts with *Sedums*, *Saxifragas* and *Sempervivums* in great numbers. The bottom picture shows the Iris garden, with the stepping stones in the water. Massed with the *Iris*es were various forms of *Spiraea*, and numerous hardy Ferns.

SEEDLING POTATOS AT READING.

On a recent visit to Messrs. Sutton & Sons' seed farm at Reading I saw as many as 1,200 roots of second-year seedling Potatos, all from carefully-planned crosses. The roots had just been lifted, and each was laid out for careful comparison. The crosses were made in 1908, and the seed was sown in 1909. From the 1909 seedlings 1,200 were selected for further cultivation, and one tuber only of each, ranging in size from an Acorn to a Walnut. The planting was done this spring on open, farm land, not dug, but ploughed, the testing was to be of the severest kind. The collection of seedlings included a few varieties with coloured skins, but the great majority were

white, and they varied in shape from a true kidney to round, with others of intermediate forms. Many of these single roots showed wonderful productiveness, some having from 30 to 36 tubers, and weighing together as much as 7 lb. The selecting from this batch of those to be grown again next year was a very difficult task, as the average excellence was high, yet the number was reduced to about 70 sorts. These will be submitted to a further trial, and the number again reduced, with a view to getting really first-class varieties for commerce.

Whilst these second-year seedlings were seen only in single roots, there were numerous varieties in other parts of the farm that were of the third and fourth years from seed, and were growing in rows containing from 12 to 15 plants of each variety. In these cases also, the tubers were planted on ploughed land and in ploughed furrows just as is seen in ordinary field culture. The farm soil is rather shallow on a deep bed of gravel, and is far from being ideal soil for Potato culture. These circumstances render the trial of the older seedlings all the more valuable, because each variety was left to show

many of these seedlings with rows from picked seed tubers of Up to Date, Windsor Castle, and other well-known varieties, and to note how greatly they excelled these named varieties in the amount of crop and in the form of tuber. It may be mentioned that duplicate stocks of all the seedlings are in cultivation in Scotland, where another trial is being made. A. D.

BRITISH HEATHS IN THE GARDEN.

British Heaths, though fastidious to some extent in their likes and dislikes of soil and situation, may often be established in places far remote from those in which they grow naturally. A sandy soil is, of course, the one they most delight in, but they may be grown with some success in a poor loam if sand be added, or even grit from the roadside, and they will also thrive on a fairly retentive clay or loam if something of a lighter nature is mixed with it. A gravelly soil suits them well, but sand should be added if the gravel is too coarse in nature, or it is at all inclined to be sticky, as it is



FIG. 100.—THE CHELSEA PHYSIC GARDEN. PLANTS OF THE NATURAL ORDERS GROUPED TOGETHER IN BEDS.

its special characteristics without undue stimulation. Here again a process of rigid selection was employed, marks being given to those of outstanding excellence. Apart from beauty of form, which was very manifest in most cases, productiveness was remarkable. Not least striking was the general absence of disease in the tubers, although most of the haulm had been destroyed. It may be said that disease resistance is natural to seedling Potatos, but, on the contrary, experience has shown that such is not the case. To be capable of resisting disease in such a season as the present, seedling Potatos must have strong disease-resisting powers. Messrs. Sutton have, from the time of the introduction of their famous Magnum Bonum, constantly aimed to produce disease-resisting Potatos. In dry seasons cultivators are too apt to treat the fungus with indifference, but when its destructiveness is made so manifest as this season, then the Potato grounds themselves cry out for some power to check its ravages. It may be that the constant raising of new, hardy varieties from seed will be more effective than any other means.

It was interesting to compare the produce of

apt to be in clayey districts. Though Heaths will thrive in a comparatively shallow soil, it will always be found that they do best if given a fair opportunity to push their roots to a fair depth, and any border specially made for them should not be less than a foot deep. Some kinds do best in very dry, sloping situations, fully exposed to the weather; others take more kindly to low, damp places, and appreciate a certain amount of shade.

Erica ciliaris.—The fringed, or ciliated Heath, is by far the most handsome of our native species. It is a very local plant, but in some parts of Cornwall and Dorsetshire is as common as *E. cinerea* is in most parts of the kingdom. The fringed Heath has large purple flowers and rich green foliage. It prefers a dry situation, and blooms in June and July.

E. cinerea.—The common, or fine-leaved Heath, familiar to everyone, when seen in perfection, as it may be on some of the south-country moorlands, is a magnificent plant. Like *E. ciliaris*, it enjoys best a dry, sunny place, and it is one of the most easily established species.

E. vagans.—Another very beautiful Heath is the Cornish Heath, which grows abundantly in parts of Cornwall and also in the littoral districts of co. Waterford. This is a large, strong-growing species, which flowers throughout the summer and early autumn, making a fine show. One of its advantages is that it is very prone to white variation in the flowers.

E. tetralix.—A very common but less striking species is the cross-leaved Heath, which prefers a rather damp situation, although it will exist in company with *E. cinerea* on drier soil. *E. tetralix* is welcome because it blooms early, its pale, pink flowers often being in evidence quite early in June. In its white form, as it may sometimes be seen on moors and commons, it is a charming plant.

E. mediterranea.—The Mediterranean Heath is so called because it was introduced to this country from Spain, but it also grows wild in Mayo and Galway. It is sometimes known, therefore, as the Irish Heath. As a garden plant it has long been cultivated. In a congenial situation it makes a fine, bushy plant, and its flesh-coloured flowers are pleasing, if not so striking as those of some other kinds. The only other British species is Mackay's Heath (*E. Mackayi*), which is regarded as a sub species, and is found only in co. Galway.

Calluna vulgaris.—The common Ling, or Heather, is too well known to require more than passing mention, but on account of its beauty and great variety in colouring, it is well worthy of a place in the garden. In some parts it is found wild with pure white flowers, and at various stages of its growth the common form passes through all the shades of rose, mauve, and purple. A handsome double form of this plant, with almost red flowers, is found in some districts of Cornwall.

In attempting to establish these moorland plants in gardens, it is essential to remove the roots, with an extra large ball of soil attached, early in November, and the operation of transplanting should never be attempted in dry weather. After planting, the border should be trodden as firmly as possible, and, in the absence of rain, water must be given freely. B.

FRUIT REGISTER.

RENOVATION OF OLD PEAR TREES.

In many gardens there are wall fruit trees which have long since passed their best condition of fruiting. Such trees would be better replaced by younger specimens, but, from reasons of sentiment, generally, the gardener is not permitted to destroy them. In many cases the owner expects the same amount of fruit from these veterans as they produced when younger, and, if the quality is deficient, the gardener is blamed. Old Pear trees of this description are especially common, and the following hints on their temporary renovation may prove useful.

Sometimes a compromise can be effected whereby the grower is enabled to destroy the oldest of the trees and plant others in their stead. If the remainder are subjected to a judicious spur pruning and the roots are lifted as far as possible and supplied with fresh compost, they may be induced to continue to yield fruits of medium quality. Autumn is the best season to commence operations; first, a trench should be opened some 9 feet distant from the stem of the tree. All roots encountered at this point should be severed, but those nearer the stem must be preserved without injuring them. Such as are found plant enough may be pegged back out of the way, and kept covered with mats, which should be damped frequently, but those which are too stubborn to be thus treated should have some old canvas or haybands wrapped around them and be kept damped also. A good ball of soil should be left undisturbed some 3 feet or 4 feet distant

around the stem, but the precaution should be taken to ascertain if there are roots beneath it. To do this, it will be necessary to excavate beneath one-half of the ball at one time, ramming the soil again as firmly as possible before operating on the other half. Any downward-growing roots must be severed close up to the ball. Before laying out the roots afresh, all broken ends should be severed smoothly, and the thick, fibreless roots may be notched here and there to encourage the development of new roots. They should then be laid in the new compost in a nearly horizontal position, and covered with the finer particles of soil. The new compost may consist for the most part of good, turfy loam, with ashes and charred material from the garden fire, some burnt soil or ballast, and lime rubble. If the loam is of good quality, $\frac{1}{2}$ cwt. of bone meal and the same weight of $\frac{1}{2}$ inch bones to about 10 cart-loads of soil, will suffice to enrich the whole, but if the loam is inclined to be poor, a little well-rotted farmyard manure may be included. Tread the ground firmly as the trench is filled in, and when the work is completed well water the soil and apply a mulch. The operation of spur-pruning should be spread over two or three seasons, so as to avoid giving the trees too great a check, which would be the case if it were done at one time. Every alternate branch may be dealt with at first, or every other spur may be removed on all the branches at the first pruning. Then either one-half of the remainder, or the whole, just as may be deemed advisable, may be dispensed with the year following. There are two ways of dealing with the spurs which are to be dispensed with. The one is to cut them back to within an inch of the main branch; the other, to remove them entirely. Equally as good results are to be obtained by the application of the one method as the other, for in both cases numerous young growths will result, and these may be made to form new spurs. By these means the branches will, in the course of a few seasons, become entirely reclothed with short, robust, fruiting spurs, which will yield good, if not large fruits. To encourage the formation of roots near the surface, summer mulching and feeding with artificial manures, in addition to affording water in hot, dry weather, with an occasional soaking of liquid manure, must be carried out. When the roots are feeding near the surface in warm soil, the quality of the fruits is much improved. A. W.

The Week's Work.

THE FLOWER GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Hertfordshire.

The treatment of bedding plants.—The removal of the summer bedding plants and their subsequent treatment will now engage the attention of most gardeners. Those plants which will be used for a similar purpose next year must be treated with every care, but many of the soft-wooded plants are of no further use, and these should be removed to the rubbish heap. Standard plants of Fuchsias, Pelargoniums, Lantanas and Streptosolen Jamesonii that were plunged in their pots, should have the roots trimmed off from the pots, the pots washed, and the plants pruned to the hard wood. They should then be placed closely together in a cool house or deep pit. Occasional syringings when the weather is fine, and shade from bright sunshine will assist the plants to recover from the severe check. Those which were knocked out of the pots before planting should be put into pots of the smallest size possible. Plants of tuberous rooted Begonias should be laid out thinly and protected from rain in a cool place, where plenty of light may reach them, until they are dried off, when these may be stored away in boxes of sand, carefully labelling any varieties it is wished to keep distinct. Old stools of Pelargoniums should be potted up into 5-inch pots and cut back. Lobelia cardinalis and its varieties should be cut down, and the tubers boxed up and placed in a cool house. Cannas need to be lifted

and placed in some frost-proof position, where these may rest during the winter months. In respect to *Echeveria secunda glauca*, we make a practice of sorting the individual plants into their sizes; they are afterwards banked up with a setting of soil, in a slanting direction towards a low wall of a greenhouse in a southern aspect. These do not require any other attention beyond covering them in frosty weather with a few mats. Should exceptionally hard weather set in, we apply a further covering in the shape of a layer of Wheat straw. The plants of *E. secunda glauca major* and *E. farinosa* are boxed up and placed in a dry greenhouse. Any decayed leaves that form from time to time are removed promptly.

General work.—Attention must be directed from time to time to the cuttings of bedding and other plants. The Pelargonium cuttings which were placed in boxes out-of-doors must now be removed to another position, preferably to frames which have a flow and return pipe; the boxes should be elevated as near to the glass as is possible. Give abundance of air, and allow a slight heat in the water pipes. Cuttings that were struck in heat must be removed, as the roots are formed, to cooler quarters, and the longest shoots pinched. Keep the growth as sturdy as possible. Give air to cuttings of Pentstemons and Calceolarias when these have formed roots. Choose a dry day for gathering seed of Pentstemons and any other plants, and lay the spikes out thinly on trays to dry, afterwards bunching them and suspending them in a cool, dry structure. The pleasure grounds require frequent sweepings. Clean out all drains in the carriage drives, walks and other places. Get in a stock of mats for winter protection, and in wet weather they may be tied in a neat manner. Obtain plenty of bracken, and place it in a dry shed for use as a protecting material.

THE HARDY FRUIT GARDEN.

By A. R. SEARLE, Gardener to the Marquis of NORTHAMPTON, Castle Ashby, Northamptonshire.

Gathering and storing of fruit.—Mid-season and late varieties of Apples and Pears should not be gathered until the stalks part readily from the trees. These fruits are very scarce this season, and extra care should be taken in harvesting them, as they are sure to be valuable during the coming winter. Select sound fruits only for storing; any that are bruised, small, or deformed should be used for present consumption. As each variety is placed in the fruit room, see that it is correctly labelled. In gathering, avoid the common error of placing too many fruits one on top of the other, as those at the bottom of the basket are liable to be bruised if a heavy weight is pressing on them. Any specimens intended for exhibition purposes should be placed by themselves in the fruit-room.

Nuts.—Like all other fruits this season Cob Nuts and Filberts are very late in maturing. They should be gathered as soon as the kernels are brown on the outside. If they are allowed to remain after they are ripe they commence to drop, and many are lost. Nuts should be stored on a cold floor, where the conditions are moist, but not where rats or mice can reach them. Where squirrels are plentiful these will soon clear the whole crop of Nuts unless measures are taken to prevent them.

Plums.—Late fruiting varieties should be examined at intervals, and the ripe fruits gathered. Birds and wasps often attack the best fruits as soon as they are ripe, and this must be guarded against. Plums may be kept in a good condition after they are gathered by placing them, in a single layer, on fish netting stretched tight in a cool, well-ventilated room.

General work.—Any trees which are infested with insects should be sprayed with some suitable insecticide directly the crop is gathered. Nets that are no longer required should be dried in fine weather, and stored until another season. They may be hung in a dry loft either from the walls or from the roof. All mulching materials about the roots of fruit trees, if it has not been removed already, should be taken away, in order that the sun and air may exercise their influences on the borders. Where the soil about fruit trees has been trodden upon, it will be advisable to lightly fork it up.

PLANTS UNDER GLASS.

By JOHN DONOGHUE, Gardener to JOSEPH PICKERSGILL, Esq.,
Bardon Hill, Westwood, Yorkshire.

Euphorbia fulgens (*jacquiniaeflora*).—Plants of this species should be exposed to the sunlight as much as possible, keeping them near to the glass, in order to induce sturdy, short jointed growths. In cases where some of the shoots have been bent downwards for the purpose of forming specimen plants, this treatment should not be continued later than this date, it being necessary that the plants assume a natural shape before the flowering season commences. At the present stage of growth, a little top-dressing of some approved chemical manure and occasional waterings with soot-water are beneficial. It is now necessary to exercise greater care in the watering, for any excess of moisture at the roots at this season will have serious effects. The flowering shoots may be looped up to a neat, green stake placed in the centre of the pot. Keep a sharp lookout for Brown scale, and see that the plants are perfectly clean before the first flowers open.

Hippeastrum (*Anagallis*).—When the bulbs of *Hippeastrums* have become thoroughly matured, they should be stored away in a cool greenhouse where frost cannot enter. They may remain in this condition during the winter, but it will be necessary to examine them at intervals, affording sufficient water to prevent the bulbs from shrivelling. Seedlings should be examined carefully, with a view to repotting those likely to require more root room before the new year. These will require a rather moist, warm atmosphere, but not sufficient to induce much root action or top-growth during winter. Ventilation must be practised, but in such a manner as to prevent cold draughts reaching the seedlings.

Alocasia.—Plants of *Alocasia* having now nearly completed their growth for the present season, attention must be directed to the matter of ripening up the tubers before the advent of winter. For this purpose there must be a slight reduction in the supply of water to the roots, and the plants should be placed in elevated positions, where they will be exposed to the light and air. As the foliage ripens, the tubers may be allowed to remain in their pots, and the pots can be placed in a dry position in the stove for the winter. *Alocasia Sanderiana* requires exceptional treatment. It succeeds best if treated, not as a deciduous plant, but rather as one which retains its foliage through the year. It should be given occasional waterings at the root, and it must not suffer excessive dryness at any season.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence,
Bart., Burford, Surrey.

Sobralia.—Such *Sobralias* as *S. macrantha*, *S. m. alba* (syn. *Kienastiana*), *S. Lowii*, *S. Ruckeri*, *S. virginialis*, *S. albo-violacea*, *S. Wilsoniana*, *S. Holfordii*, *S. Warscewiczii*, the new *S. Cliftonii*, and the hybrids *S. Veitchii*, *S. Amesiana*, *S. Wiganie*, and *S. Colmanie* form a good representative collection. Where such a collection is cultivated, as here at Burford, there is maintained, with short intervals, a supply of bloom from May until the present time. Those now in flower include *S. Lindenii* and *S. Warscewiczii*. Any necessary repotting may be done at this season, giving first attention to those which bloomed early. All the *Sobralias* are very strong growers, and they require plenty of pot room. Large specimens may be divided at this season, and any plants that need a larger receptacle through having been in a pot-bound condition for a long time, may be afforded a liberal shift as soon as the new breaks commence to show themselves, using a compost of fibrous loam, *Osmunda* fibre, and *Sphagnum*-moss in equal parts. It is necessary to cut up the *Osmunda* and *Sphagnum* moderately fine, for if used in a rough state, it will not readily mix with the loam. Provide good drainage, and in the potting sprinkle a few handfuls of fine crocks amongst the soil. Press the compost moderately firm, leaving a space of half-an-inch below the rim of the pot for affording water. It is not always desirable to repot a *Sobralia* immediately it has filled its pot with roots, as the plants would then soon become too large and unwieldy. Such root-bound plants will flower well and keep in good condition for years if they are afforded plenty of water at all times, with an occasional watering with weak cow-

manure. For some time after root-disturbance the soil must not be kept very moist. Place the plants at one end of the intermediate house, where they will get plenty of head room and not near enough to the roof-glass to be injured in very cold weather. Arranged well up to the light against the back wall of a three-quarter span, or a lean-to house is a very suitable position for them. As the leaves commence to change colour, cut the old stems down to the roots, then tie the young growths out clear of each other, so that each one will be exposed to the light and air. The repotted plants should not be interfered with in this way, it being preferable to defer the operation till the plants are growing vigorously.

FRUITS UNDER GLASS.

By B. GOODACRE, Gardener to Sir ERNEST CASSEL,
G.C.B., Moulton Paddocks, Newmarket.

Tomatos.—The plants for fruiting in winter are now nicely established in the soil, and they are carrying several trusses of fruit. They require a fairly dry, airy atmosphere with a temperature of 55° to 60° at night. Watering should be done with care in the early part of the day, but it is not desirable to apply stimulants during the autumn and winter months. Allow each plant ample space so as to expose it to the sun and light, and wash the roof glass as often as may be necessary to remove any smut or filth which would obstruct the light. On sunny days the plants may be tapped or slightly shaken to assist in distributing the pollen. All lateral growths should be kept pinched off. For raising plants to fruit early next season, a pinch of seed should be sown in a gentle heat, and the seedlings should be pricked off into small pots when they are large enough to be handled, wintering them on a shelf near the glass in an intermediate house or in the house that contains the winter-fruiting *Tomatos*. These autumn-raised plants should be ready for planting in their fruiting quarters early in the year, and they may be expected to bear fruit several weeks earlier than plants raised in spring.

Vinerics.—Vinerics containing ripening Grapes will now require careful ventilation, or the shortening days and cold, damp nights will result in the berries being affected with mould and rot. As these late crops are generally required to hang upon the vines for some time, it is necessary that they should mature thoroughly. Encourage the ripening process by a judicious use of fire-heat and maintain a dry, warm atmosphere. On sunny days admit air freely, but if the weather is dull and foggy open both top and side ventilators very slightly only, and maintain sufficient heat in the water pipes to keep the temperature about 60°. To check evaporation, save frequent waterings, and prevent the dust rising, a mulch of clean straw may be applied to the border.

Ripening the wood.—Young vines, and those which from various causes have excessively strong, sappy growths, usually retain their foliage longer than is desirable. Afford full ventilation and keep a gentle heat in the water-pipes during dull weather. It will also help the lower buds considerably if the laterals are shortened to about half their length. To assist the ripening, the roots should be kept in a fairly dry state, but never allow the border to get dust-dry. Any mulching of litter or manure which has been applied to the outside borders earlier in the season may be removed to let the border sweeten before applying a winter covering.

THE KITCHEN GARDEN.

By JOHN DUNN, Kitchen Garden Foreman,
Royal Gardens, Windsor.

Peas.—Peas raised in June and now swelling their pods require liberal supplies of weak liquid manure from the farmyard every four or five days in order to hasten their development. If liquid manure is not available, the ground about the plants should be dusted freely with guano or some artificial manure, following this with an application of clear water, which should be allowed to remain in the sunshine for some time before use. When the latest *Peas* have set a few pods on each plant, the tops may be pinched out with advantage and liberal supplies of water applied to the roots. If the plants are growing through the sides of the rows of sticks additional supports should be given to

keep them in an upright position, and to allow the free passage of air between the rows. The only pest likely to trouble the cultivator now will be sparrows, and these may be guarded against by covering the rows with Strawberry nets. Every effort should be made to continue this crop as far into October as possible. From sowings made here early in June we are gathering good pods every day. Autocrat is our latest variety, and it seldom fails to give satisfaction.

French Beans.—The plants in the open garden should be afforded protection on cold nights. If any spare lights are available, these make the best covering, and should be raised at least 6 inches above the plants. By the use of such lights, the supply of Beans may sometimes be continued long after the first nip of frost has injured the rest of the vegetation.

French Beans in pits.—If seeds were sown late in July, the plants in unheated pits will be well in flower by this date, and should have the lights placed over them each night and removed again in the morning. The plants should be watered freely in the early part of the day so that the surface moisture may evaporate before the evening, especially if the weather is cold. Later plants in heated pits may be treated in the same way until frost sets in, when a little heat may be employed. A sowing may now be made in pots for fruiting at about the third week in November. Pots 7 inches in diameter are the most suitable for this crop, and the soil should consist of loam two-thirds and leaf-soil one-third. It should be made moderately firm, and seven seeds may be placed in each pot, covering them 1 inch deep with fine soil; the pots may be placed in a temperature of 60° until the young plants appear, when they should be placed near the glass and syringed twice each day.

Lettuce.—Lettuce seed may be sown either in a cold pit or in a border with a warm aspect where some protection can be given from snow and severe frost. The plants should afford a supply in April, and they will be much harder than plants raised in spring and grown in pits. Hardy Hammersmith, Stanstead Park, and Brown Cos are good varieties for this purpose.

Mushroom beds.—Continue to collect manure and prepare beds for succession. Lay the manure in a dry shed and turn it frequently. Beds spawned now should afford supplies about the middle of November; these beds should be at least 1 foot deep when ready for spawning, as at this season they lose their heat much quicker than in summer. After spawning, the beds should be covered a few inches deep with straw to hinder evaporation.

THE APIARY.

By CHLORIS.

The honey season 1910.—The past season has been very disheartening to beekeepers, and last year was nearly as bad. But in every branch of business some years are apt to prove failures, and the beekeeper should take heart, and do his utmost to make the coming year a successful one. Since my note on feeding appeared (see p. 181), I have examined three apiaries, and have found several colonies destroyed through starvation. Very few hives have sufficient honey to provide the bees with food through the winter, and feeding must be practised.

Queens.—The present is a good time to purchase queens, as they are cheap. Follow the directions given in the issue for July 22. Italian queens are also cheap now, and may be similarly introduced. Remember that Italian bees do not produce good section honey; it looks watery as the cappings are close to the honey, but for producing honey for extraction they are unequalled. The pure Ligurian bees show three upper bands of bright and yellow on the abdomen.

Driven bees.—In most country places there are cottagers who still keep bees in straw skeps. The bees in these hives may usually be had for the asking. They may be added to those hives which are weak. First smoke the hives and then remove the quilts, shaking in some fresh bees and smoking them down. By this means time is saved, for when bees are thrown down in front of a hive, they lodge under the shelter.

A warning.—Those who are feeding will do well to have the entrances of the hives so adjusted that only one bee may enter at one time. This will check robbing.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Special Notice to Correspondents.—The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

Letters for Publication, as well as specimens of plants for naming, should be addressed to the EDITORS, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, OCTOBER 1—

Soc. Franc. d'Hort. de Londres meet.

TUESDAY, OCTOBER 4—Scottish Hort. Assoc. meet.

WEDNESDAY, OCTOBER 5—

Nat. Chrys. Soc. Exh. at Crystal Palace (2 days).

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich 52.8°.

ACTUAL TEMPERATURES.—

LONDON.—Wednesday, September 28 (6 P.M.): Max. 75°; Min. 48°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, September 29 (10 A.M.): Bar. 29.9; Temp. 66°, Weather—Sunshine.

PROVINCES.—Wednesday, September 28: Max. 68° Cambridge; Min. 51° Ireland N.

SALES FOR THE ENSUING WEEK.

MONDAY, TUESDAY, WEDNESDAY, THURSDAY, AND FRIDAY—

Dutch Bulb. at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.

TUESDAY AND WEDNESDAY—

Twenty-sixth Annual Sale of Nursery Stock, at Sunningdale Nurseries, Windleham, Surrey, by Protheroe & Morris, at 12.30.

TUESDAY TO FRIDAY—

Clearance Sale of 100,000 Fruit Trees and other Stock, at St. John's Nurseries, Worcester, by Protheroe & Morris, at 11.30.

WEDNESDAY—

Bulbs, at 1: Azaleas, Palms, &c., at 5; at 67 & 68, Cheapside, E.C., by Protheroe and Morris.

THURSDAY AND FRIDAY—

Clearance Sale of Nursery Stock, at Tunbridge Wells Nurseries, Tunbridge Wells, to Mr. S. Crapps & Son, Ltd., by Protheroe & Morris, at 11.30.

FRIDAY—

Orchids, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

Diseases of Gooseberry Bushes.

The rapid spread of American Gooseberry-mildew in this country has tended to withdraw attention from the two other diseases of Gooseberry bushes, one of which, at any rate, is responsible for considerable losses to fruit-growers. The more frequent disease of the two is caused by that omnivorous pest, *Botrytis cinerea*, while the other is presumably due to *Cytosporina Ribis*, a fungus whose nearest relative are harmless saprophytes. The disease caused by the *Botrytis* was first described by Miss Smith, and recently Salmon has called attention to it in a practical manner in the *Journal of the Board of Agriculture* (April, 1910). The other disease was originally reported from Holland by Van Hall. Both of these diseases have recently been investigated by Brooks and Bartlett in detail, the results of their researches being published in the *Annales Mycologici* (April, 1910). Their work deals with the loss of bushes in Cambridgeshire, where the fruit-growing industry is year by year becoming of greater importance.

The disease due to *Botrytis* is sometimes called "die-back" by growers, the name

being due to the fact that in many cases the younger branches are first affected. The presence of this disease is most evident in the spring, when the foliage of affected branches is found to be wilting. The basal parts of such branches at this period of the year generally show innumerable tufts of the conidiophores of *Botrytis* bursting through the bark. These fructifications arise from the black sclerotia of this fungus, which are embedded in the bark. Branches which have been killed by the disease can be readily broken off at the point of union with the main stem. Infection spreads from the base of an affected branch into other branches, so that in the course of a few years the whole bush is destroyed. If the main stem of the bush becomes girdled by the fungus, death ensues. Gooseberry bushes seem to suffer from this disease independently of the kind of soil and situation. The most heavily-cropping varieties of bushes are the kinds most often affected, *Whinham's Industry* and *Keepsake* being particularly liable to attack.

The mycelium of *Botrytis* has been found to be present in the wood as well as in the bark of affected branches. Its presence in the vessels of the wood enables it to spread rapidly, either downwards or upwards. The wilting of the foliage, which is so common a feature of this disease, is doubtless due to the presence of the hyphae in the vessels, and the consequent interference with the rise of the transpiration current.

Inoculation experiments made by placing the developing mycelium of this fungus in the stems of healthy bushes resulted in the production of the usual symptoms of the disease, and subsequently in the death of the inoculated branches.

It was formerly thought that *Botrytis* entered the bushes by means of a wound at soil level, but we now know that, in several cases at any rate, this pest begins its attack in the upper parts of the bush, and subsequently travels downwards. Several observers have shown that it is rare for the spores of *Botrytis cinerea* to cause directly the infection of healthy tissues; more frequently *Botrytis* begins its development where saprophytic nourishment is available, and causes only at a later stage the destruction of living tissues by the secretion of some poisonous substance in advance of its own growth.

Although there is still some obscurity with regard to the mode of infection of Gooseberry bushes in nature by *Botrytis*, there is no doubt that the attack may begin in a variety of ways. Brooks and Bartlett have suggested that this fungus may follow an attack of green-fly, and, possibly, of scale insects also; and that young shoots killed by late frosts provide a favourable starting point for the disease in question. The fungus may begin to spread from old bud scales, and from flowers which have not set fruit. Other possible modes of infection have also been suggested. Salmon has observed occasionally that the berries are affected. It is likely that in such cases infection has resulted directly, as in the disease of Grapes caused by the same fungus.

The only remedial measure that can be suggested for this disease is the removal and burning of affected bushes, spraying being usually of little avail against such an insidious pest as *Botrytis*. It is highly probable

that the disease would not be nearly so prevalent as it is if it were the custom to burn all bushes showing branches with wilted foliage. At present little attention is paid to this matter, and diseased bushes are frequently left *in situ* until every part is dead, and long after sclerotia have been developed. It should be borne in mind that when these bodies germinate they afford abundant opportunities for the spread of the disease.

A Gooseberry bush attacked by the other disease, to which reference was made at the beginning of this article, shows symptoms which are very similar to those evoked by *Botrytis*. Either the whole bush, or one of the younger branches springing from near the base of the plant, dies somewhat suddenly. If, however, the stem of the affected part is cut across it is seen that the discoloration of the wood is proceeding in a manner differing from that which occurs when the disease is due to *Botrytis*. Furthermore, if pieces of wood are taken at the junction of healthy and diseased tissues and are kept under suitable conditions, the fruit bodies of *Cytosporina Ribis* develop, whereas from a stem attacked by *Botrytis* the conidiophores of the latter fungus arise. The fruit bodies of *Cytosporina Ribis* were observed last autumn upon diseased branches of bushes in the plantations, the masses of spores being extruded in the form of delicate yellow tendrils. Until the present it has not been possible to induce the spores of *Cytosporina* to germinate, so infection experiments have not yet been performed. Hence, all that can be said as yet is that this disease is probably due to *Cytosporina Ribis*. This disease is nearly always associated with the presence of a wound, frequently found at soil level, and it is highly probable that the attack originates at such a point. Affected bushes should be burnt, and care should be taken, in cultivating the soil between the rows, to avoid making wounds in the bushes.

A careless policy in regard to such diseases as are here described generally leads to serious losses. When growers can be persuaded to grub and burn affected bushes more rapidly than they do at present, a valuable lesson in plant sanitation will have been learnt. Some already pull up diseased bushes, but often their good intention is spoilt by allowing the bushes to lie about on the ground for a considerable time before putting them on the fire.

NATIONAL CHRYSANTHEMUM SOCIETY.—The Society's early exhibition will be held at the Crystal Palace on Wednesday next, October 5.

PRESENTATION TO A NURSERY EMPLOYÉ.—Mr. HUGH NIXON, who is severing his connection with Messrs. FELL & Co.'s, Royal Nurseries, Hexham, after 24½ years service, was presented on the 21st ult. by members of the firm and his fellow employés with souvenirs on the occasion of his leaving for British Columbia.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—The 24th anniversary dinner will be held at the Waldorf Hotel, Aldwych, on Thursday, October 6 at 6.30 p.m. The chair will be taken by Mr. EDWARD SHERWOOD. The secretary, Mr. W. COLLINS, 9, Martindale Road, Balham, S.W., will be glad to hear not later than Tuesday, October 4, from those intending to be present.

HORTICULTURAL INSTRUCTION AT THE SOUTH-WESTERN POLYTECHNIC INSTITUTE.

A course of horticultural instruction is given at the South-Western Polytechnic Institute, Chelsa. The course consists of lectures and practical work on Tuesday evenings, 7 to 10 p.m., conducted by Mr. H. J. JEFFERY, A.R.C.S., together with practical demonstrations on gardening operations at the Chelsea Physic Garden, under the supervision of Mr. HALES (the Curator), on Saturday afternoons. A course of lectures on technical or economic botany, by Dr. S. E. CHANDLER, is given on Wednesdays from 7 to 10 p.m. A copy of the syllabus of either course can be obtained from the Institute.

PRESENTATION TO A GARDENER.—Mr. F. CLIPSTONE, who is resigning his position as gardener at Dingley, Market Harborough, after 18 years' service, was the recipient of a gift from the members of the garden staff on the 21st ult.

FORESTRY APPOINTMENT FOR ABERDEEN STUDENT.—An appointment has been conferred on Mr. F. G. SPRING, a diploma student, of the Aberdeen and North of Scotland College of Agriculture, in the shape of an assistantship to the Director of Agriculture and Superintendent of the Government plantations in the Federated Malay States, at a salary commencing at £360 per annum.

A NEW JOURNAL FOR ORCHIDISTS.—We have been favoured with a copy of the first issue of a new monthly journal devoted entirely to Orchids. The editor is Mr. J. GURNEY WILSON, a well-known member of the Orchid Committee of the Royal Horticultural Society. The *Orchid World* consists of 32 pages of matter and advertisements, and it is printed on very good paper, especially suited for reproducing half-tone illustrations, though scarcely so pleasant to the reader as paper which is less glazed. The editor contributes an interesting article on Sir TREVOR LAWRENCE's collection at Burford, and this is accompanied by a first-class portrait of Sir TREVOR LAWRENCE himself. Mr. H. G. ALEXANDER has an article on *Vanda cecilia*, accompanied by excellent illustrations of this lovely species. "Rare Native Orchids" is treated by Mr. A. D. WEBSTER. Other features include notices of books, descriptions of new Orchids, reports of meetings of the R.H.S.'s Orchid Committee. The issue will be distributed on Wednesday, October 5, and the price is 1s., post free. We hope that this latest enterprise will help to still further popularise Orchid culture, and we wish it every success.

NORTH BRITISH STATION GARDENS.—The awards have just been issued in connection with the prizes offered by the North British Railway Company for the best-kept station gardens. They are divided into four classes, the winners in the first receiving £4 each; the second £3; the third £2; and the fourth £1. The following are in the first class:—Mr. BLACKWOOD, Alva; Mr. NAIRN, Armadale; Mr. MILLIGAN, Barrasford; Mr. FERGUSON, Burgh; Mr. NAPIER, Cauldrot; Mr. TURNBULL, Chirnside; Mr. STEWART, Cupar; Mr. BELL, Duns; Mr. BRYDON, Edron; Mr. STEVENSON, Helensburgh; Mr. GRANT, Hillfoot; Mr. HAND, Kinross Junction; Mr. SCOTT, Marchmont; Mr. ARMSTRONG, Middleton; Mr. SPIERS, Row; Mr. RENTON, St. Monans; Mr. WANN, Slamannan; Mr. CUTHBERTSON, Strathbland; Mr. MURDOCH, Summerston, and Mr. WATERSTON, Winton. There are no fewer than 40 in the second class.

TRADE NOTICE.

Mr. J. Taylor, for many years with Messrs. Sander & Sons, St. Albans, will in future represent Messrs. Mansell & Hatcher, Ltd., Rawdon, Yorkshire.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

THE LATE MAX LEICHTLIN.—I have read with great interest Mr. H. J. Elwes' remarks in your last issue on the late Max Leichtlin. As a boy, I heard Leichtlin's name mentioned frequently by my father, and always in connection with some new plant. I had the pleasure of making his acquaintance some few years since in the lovely town of Baden-Baden, where he had resided for so long; but it was very evident then that his health was giving way, and he was soon afterwards obliged to give up his garden, from which he had introduced so many new plants to cultivation. His lists of new plants were eagerly opened and read, and such was the confidence placed in his judgment, that many a plant was entirely disposed of within a few days of its being offered. The popularity of hardy plants to-day is partly due to the work of Max Leichtlin, and others who have passed away. But men are soon forgotten, unless some permanent memorial is founded to them, some scheme should be promoted so that the name of Max Leichtlin may still be remembered amongst us. The following names of plants introduced by him occur to me as I write, in addition to those mentioned by Mr. Elwes: *Aster subcœruleus*, *Kniphofia Nelsonii*, *K. hybrida Triumph*, *Star of Baden*, and other *Kniphofias*;



THE LATE MAX LEICHTLIN.

some very fine, named seedlings of *Tris reticulata*, *Tropeolum polyphyllum Leichtlinii*, *Liatris graminifolia Dubia*; a Chinese form of *Lilium giganteum*, which at one time grew finely at Burford Lodge; *Aubrietia Lavender*, a fine seedling, and one of the last plants listed by him. Turning over some old papers, I have just come across a small plant list issued by my father in 1874. When speaking of *Lilium dahmatticum* Catani, he mentions: "I have secured the whole stock of this magnificent Lily, collected at great trouble and expense by that indefatigable botanist Mr. Max Leichtlin." R. W. Wallace, *Colchester*.

THE MUD BEETLE IN ABERDEENSHIRE.—Considerable injury has been done by the mud beetle (*Helophorus rugosus*) to the Turnip crops in the Deeside district of Aberdeenshire. In one part especially—Dunnis—the leaves of the plants may be seen holed, as if riddled with shot, over a considerable area. The pest is well known in England and Wales, but it is not so common in Scotland; yet, from the districts of the Tweed, Forth, and Solway come reports of its appearance there this season. *Helophorus rugosus* does considerable damage both as a grub and as a beetle. The leaves of the Turnip may be eaten, the leaf stalks may be holed and tunnelled, or the roots themselves may be gnawed and tunnelled on the outer surface, and especially in the upper

part. The holes thus made afford entry to rain and fungal diseases. In an official pamphlet, the Board of Agriculture thus describes the pest:—"The adult insect measures about a quarter of an inch, is oval, oblong, and somewhat broad. The colour is dark-reddish, often obscured by a covering of mud. The wing-covers show here and there dark markings. The legs are pale red, and the antennæ of the beetle somewhat thickened towards the top. The grub has a dark coloured head and brownish jaws. The three segments behind the head each carry a pair of legs. On the upper surface of these thoracic segments is a dark, transverse curved line; whilst down the back of the remaining segments there are two rows of large, square spots, with rows of smaller spots below and down each side. The body ends in two processes." It is strange, so far as Scotland is concerned, that all the complaints made concerning the ravages of this pest on Turnips have come from Aberdeenshire. W. K.

TARRED ROADS INJURIOUS TO PLANT LIFE.—At the recent International Road Congress held at Brussels, an important discussion took place as to the effects of tarred roads on vegetation. As would naturally be expected, considerable difference of opinion exists between the motorist and the horticulturist, the former hailing the advent of the tarred road as a boon, while the latter asserts that the particles of tar now disseminated by passing vehicles are decidedly injurious to trees and shrubs. It is a recognised fact that plant life has already suffered much from tarred roads in the Bois de Boulogne; and in several parts of London—two in particular—plants that at one time succeeded admirably have been discarded, owing to the composition and treatment of the roadways. Dust did comparatively little harm, and it was readily washed from the foliage by rains, but the particles of tar and fumes given off from most of the artificially-prepared roadways have been found injurious to plants growing in close proximity. In the case of trees and shrubs brown spots usually appear on the leaves, after which the leaves gradually wither and fall; but in the case of some bedding plants the effect is quicker, the foliage in a few days appearing as if seared by frost or fire. The effects are most pronounced in warm, dry weather, and trees and shrubs, from their stronger constitution, are better able to withstand the fumes and deposit of tarry dust than is the case with tender bedding plants. During the past two years some experiments have been undertaken in order to find out which bedding plants are best suited for withstanding the injurious effects of tarred and creosoted wood pavements, and the fumes of petrol. *Pelargoniums* evidently fare worst of all, and soon lose their leaves, whereas in the same bed *Calceolarias* and *Antirrhinums* seem to be affected but little. A. D. Webster.

THE BEST METHOD OF STORING CARROTS (see p. 234).—This is evidently a case of "different men, different methods." My own experience has led me to adopt a plan which does not wholly agree with the practice of either of your correspondents. I have found Carrots to keep best when they are stored in a shed in moderately-dry sand, with their tops exposed to the air. In this manner the roots keep well and sound, with no loss of colour, until the return of spring forces them to push their flower-spikes. By that time there are plenty of next season's roots available for use. In a moist climate like that of Cornwall, it is not advisable to store Carrots out-of-doors, for, under these conditions, they would soon make fresh growths, and deteriorate. A. C. Bartlett, *Pencarrow Gardens, Cornwall*.

CEANOTHUS GLOIRE DE VERSAILLES.—This charming autumn-flowering shrub might well be planted more freely. It grows and flowers well in good, ordinary soil, especially if not of a too-clayey nature. When planted in front of a wall or building formed of limestone, and allowed to grow out therefrom, its dull-green foliage and pale-blue flowers harmonise well. The picture is more complete when golden Yew or golden Box are associated with it. As showing its hardihood in this country, I may mention that it does well at the York Nurseries, Wetherhill Park, and Bramham Park. *Yorkshire Gardener*.

BOTTLED GRAPES.—Now that the art of bottling fruit for culinary purposes is so general, and so easily accomplished with satisfactory results, it has occurred to me that bottling would be a very good means to keep up the market price of home-grown Grapes. For bottling they could be cut singly from the bunch, with a short stalk attached, and they should prove a useful addition in the store cupboard, for there are many ways in which Grapes are used in the kitchen. But, so far, I have never heard of Grapes being bottled. *H. R.*

BIDENS DAHLIOIDES (see p. 226).—The writer of the descriptive note on the above-named pretty Mexican plant in your last issue made a slight error in saying that I had received the seeds of it from Herr Purpus direct, as it was to Messrs. Artindale, of Nethergreen, Ranmoor, Sheffield, that the seeds were sent, and from whom I bought a couple of tubers in a dormant state. They must, therefore, be considered as the introducers of the plant into cultivation, and should any of your readers wish to add it to their collection, they should apply to this firm. I should also think that they will be able to offer seed of it for next spring's sowing if their many plants have ripened seed as freely as my two have done. It will be interesting to see if the colours reproduce themselves true from seed, as I consider the white form a much better and more beautiful plant than the pale, rose-coloured one. *W. E. Gumbleton.*

HARDINESS OF WICHURAIANA ROSES.—On p. 228 *S. A.* invites a few notes upon the hardiness of these Roses. I cannot endorse his view that they are not suitable for exposed situations. No Rose enjoys such a position, but surely none is more capable of growing in bleak and wind-swept quarters than Dorothy Perkins and the many beautiful Hybrids of the *Wichuraiana* type. It is strange to learn that *S. A.* finds the hybrids more hardy, as many of these are raised from varieties more tender than the typical *Rosa Wichuraiana*. Roses I find most suitable for exposed positions are the Scotch Briers, followed by the *R. rugosa*, which, if single and somewhat fleeting, gives a succession of blooms. Wind does not affect the foliage of these to the same extent as the others. *S. A.* remarks "In the other parts of my garden the same results can be seen in a lesser degree according to the amount of exposure." This sentence explains the whole of the difficulty, for although the Rose enjoys an open position, a bleak and draughty corner is most unsuitable. *A. P.*

SOCIETIES.

ROYAL HORTICULTURAL.

SEPTEMBER 27.—The usual fortnightly meeting was held on Tuesday last in the Society's Hall, Vincent Square, Westminster. The exhibition was one of the largest seen this year, both the annexes being called into requisition. Displays of fruits and vegetables were more numerous than usual. But no reward was made to a novelty in this section.

The principal floral groups, other than Orchids, were of Dahlias, Roses and hardy flowers, the latter predominating. The FLORAL COMMITTEE conferred one First-class Certificate and 12 Awards of Merit. The ORCHID COMMITTEE granted one First-class Certificate and four Awards of Merit.

At the 3 o'clock meeting in the lecture room, an address on "South America in its Relation to Horticulture" was given by Mr. A. W. Hill, M.A.

Floral Committee.

Present: W. Marshall, Esq. (Chairman); and Messrs. Henry B. May, T. W. Turner, W. G. Baker, W. J. James, Jno. Green, W. J. Bean, G. Reuthe, Chas. E. Pearson, A. Turner, J. Jennings, W. Cuthbertson, C. Blick, Jas. Douglas, R. Hooper Pearson, J. T. Bennett-Poë, H. J.

Jones, W. P. Thomson, George Paul, E. H. Jenkins, Jas. Walker, E. A. Bowles, A. Kingsmill, Jas. Hudson, Ed. Mawley, F. Page Roberts, W. Howe, C. R. Fielder, H. J. Cutbush, and R. W. Wallace.

Messrs. JAMES VEITCH & SONS, LTD., King's Road, Chelsea, showed miscellaneous greenhouse flowering plants. They displayed several fine hybrid *Rhododendrons* of the *javanico-jasminiflorum* type, the handsomest being known as *Baroness Henry Schröder*, with flowers of flesh tint. Others specially good were *javanicum* (citron-red) and *Taylori* (pink). The exhibit also included a showy batch of *Nerine Bowdenii*; varieties of *Streptocarpus*, shown in batches of distinct colours, the blue and white varieties being remarkably good; and a large assortment of *Bouvardias*, such as *President*

Messrs. H. B. MAY & SONS, The Nurseries, Edmonton, showed *Veronicas* of the large-flowered *Andersonii* type, in batches of named varieties. Some of the best were *Crimson King*; *La Merveilleuse*, mauve; *Lena*, purple; *Mont Blanc*, white; *Splendens*, mauve; *Violette*, violet; *Eveline*, pink; and *Attraction*, deep violet. They were arranged in a setting of choice decorative Ferns. (Silver Banksian Medal.)

Messrs. T. S. WARE, LTD., Feltham, Middlesex, showed a large bank of tuberous-rooted *Begonias*, embracing a good selection of named varieties, as well as numerous seedlings. Adjoining these, this firm showed bunches of hardy perennial flowers. (Silver-gilt Flora Medal.)

Mr. A. LL. GWILLIM, Cambria Nursery, New Eltham, showed a considerable number of large-flowered *Begonias* of the tuberous-rooted section.



FIG. 102.—CYPRIPEDIUM "SHOGUN," AWARDED R.H.S. FIRST-CLASS CERTIFICATE ON TUESDAY LAST.

Cleveland, scarlet; *Priory Beauty*, pink; *Vreelandii*, white; *Maiden's Blush*, pink; *Alfred Neuner*, with double, white flowers, and *Bridesmaid*, pink, also with double flowers. (Silver Flora Medal.)

Mr. FRANK LILLEY, Nurseryman, Guernsey, showed the handsome *Amaryllis belladonna* major, finely in flower; *Nerine Bowdenii*, *N. corusca* major, a variety of *N. Fothergillii*, with richer red blooms, and earlier in flowering; also *Schizostylis coccinea* and a few other bulbous flowers. (Bronze Flora Medal.)

Messrs. STUART LOW & CO., Enfield, exhibited varieties of perpetual-blooming *Carnations*, including some splendid blooms of the new *Lady Alington* variety raised from *Britannia* × *White Perfection*. (Silver Banksian Medal.)

Messrs. PAUL & SON, Old Nurseries, Cheshunt, exhibited sprays of interesting and uncommon trees and shrubs. In some species, for example, such as *Cercidiphyllum japonicum*, *Spiraea assurgens*, *Pyrus nigrus*, and *Berberis Thunbergii* the autumn tinting was very rich. Others of special interest were *Eleagnus argentea*, *Pyrus foliolosa*, with handsome pinnate leaves; *Pyrus Sorbus cuspidata*, *Catalpa Kœhnii*, with golden leaves; *Sambucus alba marmorata* and the double-flowered form of *Prunus Pissardii*. (Silver Banksian Medal.)

Mr. L. R. RUSSELL, Richmond, showed a large group of *Clematis* and hardy *Fuchsias* of the *Riccartonii* type. Some of these latter were as showy as greenhouse varieties; the most notable was *Mme. Cornellison*, having a large white

corolla; tricolor, with a pink corolla and purple-violet petals, is also pretty. Fuchsia microphylla, with small, light-rose-coloured blossoms, and *F. pumila*, were both interesting. Amongst the Clematis none was finer than the variety Lady Northcliffe, with flowers of lavender-blue. President, deep blue, is another of much merit. (Silver Flora Medal.)

ROSES.

The most important display of Roses was made by Messrs. W. PAUL & SON, Waltham Cross. The blooms were arranged in round baskets and occupied the whole of one side of a large table. A selection of the best varieties included Mme. Leon Pain, White Maman Cochet, two of the finest autumn Roses; Hugo Roller, Pharisier, Frau Karl Druschki, Charlotte Klemm, Phyllis, a Polyantha Rose with rose-carmine blooms in large sprays; Gustave Grunerwald, Ecarlate, La Tosca, Souvenir du President Carnot, Hugh

Mr. G. PRINCE, Oxford, showed blooms of Maman Cochet Irish Elegance, Frau Karl Druschki, Earl of Warwick, and other varieties. (Silver Banksian Medal.)

DAHLIAS.

One entire side of a long table was occupied by Messrs. CHEAL & SONS, Lowfield Nurseries, Crawley, with cut blooms of Dahlias of all sections. The Pæony-flowered varieties were displayed in many colours, and show boxes were filled with single-flowered varieties, pretty in colour and regular in form. Their show of Cactus varieties was likewise very good. (Silver Flora Medal.)

Mr. J. T. WEST, Tower Hill Nursery, Brentwood, made a bright show with Dahlias of the Cactus class and Pompons. Of the Cactus varieties, Rev. J. W. Jamieson (a flower of yellow and rose pink colours), Oswald (a bright scarlet

Mawley (a beautiful, pure yellow variety), Phœbus (clear yellow, a good garden variety), Ruby Grinstead (of a bright yellow colour, changing to rosy fawn), and Thomas Wilson (reddish fawn, tinged with amber). Among the Pæony-flowered varieties, we may mention Dr. van Gorkum (white-shaded rose), Glory of Baarn (delicate pink), Hugo de Vries (bronzy orange), and Nora Lindsay (dove-coloured, shaded with pink). (Silver-gilt Banksian Medal.)

Mr. J. B. RIDING, nurserymen, Chingford, Essex, showed Dahlias, including varieties of the "collarett" type. The flowers of these are like single Dahlias with a circle of raised florets in the centre. The finer were Mons. L. Ferard (crimson and white), Maurice Rivoire (crimson), Souvenir de Bernadeau (rose, with a yellow "collar"), Mme. Porrier (pansy blue), and Corbeille de Feu (scarlet, with a yellow "collar"). These varieties are popular on the Continent, but they are not much known in this country.

CHRYSANTHEMUMS AND HARDY BORDER PLANTS.

Messrs. W. WELLS & Co., Merstham, Surrey, showed Chrysanthemums of the early-flowering class, in association with hardy perennials as cut flowers. Of Chrysanthemums, mention may be made of the yellow and orange-coloured Miss Balfour Melville (a variety having reflexed, thread-like florets), Minnie Carpenter (reddish-orange in colour, also reflexed), Dolly Reeves (of a lilac tint), J. B. Duvoir (small, and likewise of a shade of lilac), October Gold, Richard (single-flowered of magenta colour), Normandie (pale lilac, a large bloom, with reflexed florets), and Leslie (a bright yellow flower). (Silver Banksian Medal.)

Mr. MAURICE PRICHARD, Christchurch, Hampshire, showed a miscellaneous collection of hardy herbaceous perennials as cut blooms, an exhibit which was bright with colour. There were Pernettyas loaded with their coloured fruits, Crinum Powellii, Asters (Michaelmas Daisies), shrubby Phloxes, many flower-heads of Kniphofia, the white-flowered Cimicifuga simplex, and others. (Bronze Banksian Medal.)

Mr. J. BOX, Lindfield, Sussex, arranged a large ground floor group so as to form a sloping bank of flowers against the wall. There were great bouquets of Asters, others of Heleniums in orange and brown colours, which contrasted in a striking manner with the blue, white, and purple Asters. About 40 spikes of Gladiolus America formed two great bouquets, greatly enhancing the attractiveness of the whole. The arrangement of this group was excellent, particularly as regards the grouping of the Gladioli. (Silver-gilt Banksian Medal.)

Mr. AMOS PERRY, the Hardy Plant Farm, Enfield, made a fine show with groups of Helenium Riverton Gem, with flowers of brown and yellow, Rudbeckia nitida Herbstone, Aster lino-syris, Pyrethrum roseum superbum, Papaver orientale, P. Mrs. Perry, and P. Queen Alexandra, Artemisia lactiflora (a plant bearing small, white flowers in panicles in great profusion), and a large number of inflorescences of Delphiniums.

Messrs. BAKERS, Wolverhampton, were exhibitors of a small group of Phloxes, perennial Asters, Anemone japonica in variety, Heleniums, Viola cornuta purpurea, early-flowering Chrysanthemums, and masses of Kniphofias.

Messrs. R. H. BATH, LTD., Floral Farms, Wisbech, had an exhibit of Chrysanthemums of the early-flowering class, of which Rose d'Arrest (of a pale blush tint), Normandie, Golden Glow, and Lillie were the more effective varieties in regard to colouring.

Messrs. H. J. JONES, LTD., Ryecroft Nurseries, Hither Green, showed perennial Asters in quantity; the more showy varieties were C. A. Anderson, Mrs. H. J. Jones, T. S. Ware, K. E. Pulling, Mrs. Hanson Morris, Lil Fardell, Fairfield, and Precocité. (Silver Flora Medal.)

Messrs. G. & A. CLARK, LTD., Dover, staged an assortment of hardy perennial flowers. We noticed a fine batch of the pretty Cimicifuga simplex, well-flowered plants of Leonotis Leonurus, a selection of good Kniphofias, Geum Mrs. Bradshaw, a fine scarlet variety with double flowers; and select varieties of border Asters. (Silver Banksian Medal.)

Mr. H. F. ROBSON, Alexandria Nurseries, Ham, Surrey, staged early-blooming Chrysanthemums of the decorative type, in considerable numbers and variety. (Bronze Banksian Medal.)



FIG. 103.—COLLECTION OF VEGETABLES AWARDED THE FIRST PRIZE OFFERED BY THE DUKE OF PORTLAND AT THE NATIONAL VEGETABLE SOCIETY'S SHOW.

Dickson, Lyon Rose, and Mrs. John Laing. (Silver-Gilt Flora Medal.)

Messrs. SAMUEL MCGREDY & SON, Portadown, Ireland, showed a group of Roses, the blooms being of excellent quality. They had many new sorts, amongst which we remarked Ethel Malcolm, H.T., ivory-white, flushed with rose colour in the centre; Mrs. Arthur E. E. Coxhead, H.T., a fine red Rose; Mrs. Edward J. Holland, H.T., salmon-rose; Mrs. Herbert Stevens, T., white, with a tinge of colour in the centre, and Mrs. Wakefield Christie Miller, H.T., blush, shaded with salmon. (Silver Flora Medal.)

Messrs. B. R. CANT & SONS, Colchester, exhibited Roses, such sorts as Rose du Barri, White Maman Cochet, Claudius, Hugh Dickson, and General MacArthur being very fine for the time of year.

Messrs. F. CANT & Co., Colchester, also showed a selection of Roses, having epergnes and vases filled with popular varieties.

flower), Nelson (of a purple-crimson tint), Primrose Queen, H. H. Thomas (scarlet), and Beryl (orange and scarlet) were the more beautiful varieties; and of the Pompons mention may be made of the varieties Nerissa, Lassie, Laddie, George Ireland, and Annie Doncaster. (Silver Banksian Medal.)

Mr. S. MORTIMER, Rowledge, Farnham, showed six blooms of the show variety Lemon, a flower of perfect shape, moderate in size, and of a tint described by its name. The same exhibitor showed a very large Dahlia of the Fancy class, having florets of orange and yellow colours, blotched irregularly with crimson.

Messrs. CARTER, PAGE & Co., London Wall, exhibited Dahlias of nearly all classes of the flower. Handsome Cactus-flowered varieties were observed in Australian (of a rich purple colour, a large, striking flower), J. H. Jackson (dark maroon), Leda (violet-rose, with a creamy base, the tips of the florets being rose-pink), Mrs.

Mr. FRANK BRAZIER, Caterham, filled one corner of the hall with a bright exhibit of seasonable hardy flowers, arranged with much taste. There was a good selection of border Phloxes, Michaelmas Daisies, Lilies, Pentstemons, Chrysanthemums, and similar subjects, with several vines carrying tinted foliage. (Silver Banksian Medal.)

A large group of hardy flowers was staged by Messrs. GEO. BUNYARD & Co., Maidstone. The majority were varieties of border Asters, but there were also good vases of Pentstemons, *Lilium auratum* and *Anemone japonica*. (Silver Banksian Medal.)

Messrs. WM. CUTBUSH & SON, Highgate, staged a large exhibit of hardy perennials, mainly varieties of border Asters, with Pentstemons, Poppies, *Solidagos*, Phloxes, Polygonum

inches in length, and are oppositely disposed on the branches, the margins being toothed. The growth and fruiting are very free, and the plant is quite hardy. (From Messrs. JAMES VEITCH & SONS, LTD., Chelsea.)

AWARDS OF MERIT.

Lobelia cardinalis *Gloire de St. Anne's*.—This handsome variety is a seedling raised from crossing *Firefly* and *Lord Ardilaun*. The brilliant, crimson-scarlet flowers are very striking and of larger size than those usually seen; the stems are tall and downy. (Shown by Lady ARDILAUN, St. Anne's, Clontarf, Co. Dublin; gr. Mr. A. Campbell.)

Pahlia Flagstaffe (*Cactus*).—A variety of rose and yellow colour. (From Messrs. J. STREDWICK & SON, St. Leonards.)

Rose Mrs. Herbert Stevens (*Tea*).—A superb, white variety, with faint creamy tone.

Rose Dorothy Ratcliffe (*H.T.*).—A handsome variety, with more than a suspicion of the Lyon Rose colouring. Indeed, it may be described as a pale form of this popular sort, having handsome, well-cupped flowers.

Rose Ethel Malcolm (*H.T.*).—The colour of this fine Rose is blush pink. (These Roses were exhibited by Messrs. MCGREEDY & SONS, Portadown, Ireland.)

Solidago spectabilis.—A distinct and good form growing about 2½ feet high, and having rich, golden-yellow flowers in erect, almost pyramidal panicles. (From Messrs. PAUL & SON, Old Nurseries, Cheshunt.)

Chrysanthemum Hollicot Pearl White.—A



FIG. 104.—THE FIRST PRIZE COLLECTION IN MESSRS. WOOD AND SON'S CLASS AT THE NATIONAL VEGETABLE SOCIETY'S SHOW.

amplexicaule, *Anemone japonica* and others. (Silver Banksian Medal.)

Messrs. R. H. BATH, LTD., Wisbech, staged seasonable hardy flowers and border varieties of Chrysanthemums. (Bronze Flora Medal.)

The Misses HOPKINS, Mere Gardens, Shepperton, arranged a small and select group of border and Alpine flowers.

AWARDS.

FIRST-CLASS CERTIFICATE.

Tiburnum Henryi.—A hardy species from China. The plant was about 4 feet in height, of dense, bushy habit, and crowded with axillary clusters of scarlet and black fruits. The young leaves are slightly grooved and bronzy-tinted; in the more mature state they are flat and of pale-green colour. They measure 4 to 6

Carnation Lady Alington.—A self pink variety of the largest size, the calyx in no instance exhibiting any sign of bursting. The flowers are fragrant and the petals pleasingly crimped. (Shown by Messrs. STUART LOW & CO., Enfield.)

Phlox Ellen Willmott.—A good and distinct novelty of dwarf habit of growth. The flowers are self-coloured and of the shade known as French grey. (From Messrs. GUNN & SONS, Olton, Warwickshire.)

Aster Peggy Ballard.—A dwarf-growing Michaelmas Daisy best described as a miniature and profusely-flowered Beauty of Colwall. The newcomer is smaller in all its parts, and should prove a welcome addition to the double-flowered section. (From Mr. E. BALLARD, Colwall.)

pure-white variety with incurving florets—a "Western King" transposed to the early-flowering section.

Chrysanthemum Hollicot Golden.—A rich-yellow, well-built flower.

Chrysanthemum Betty Spark.—The colour is reddish-lilac, the flower-head of good size. (The Chrysanthemums were exhibited by Mr. W. ROOTS, Cranford, Middlesex.)

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the Chair), and Messrs. Jas. O'Brien (hon. sec.), Harry J. Veitch, Sir Jeremiah Colman, Bart., Henry Little, R. G. Thwaites, Stuart Low, F. Sander, F. G. Hanbury, A. A. McBean, C. H.

Curtis, W. Cobb, J. Charlesworth, J. Cypher, W. H. Hatcher, W. P. Bound, H. G. Alexander, A. Dye, H. Ballantine, J. W. Potter, Gurney Wilson, William Bolton, de B. Crawshaw, and J. Leeman.

Lieut.-Col. Sir GEORGE L. HOLFORD, K.C.V.O., Westonbirt (gr. Mr. H. G. Alexander), showed a selection of *Cypripediums*, including the charming *C. Actæus Bianca*, the finest *Cypripedium* of its type and the first to depose its beautiful parent, *C. insigne Sanderæ*, from its place as first favourite in the yellow and pure white class; *C. nitens-Leeanum Hannibal*, the finely-shaped *C. Germaine Opoix* Westonbirt variety; *C. Gaston Butel* "Edward VII.," a perfect flower tinged with rose-purple; the new *C. Shogun* and *Cattleya Dirce magnifica*. (See Awards.)

Sir JEREMIAH COLMAN, Bart., Gatton Park, (gr. Mr. Collier), staged an elegant little group of varieties of *Dendrobium Phalaenopsis Schröderianum*, which secured a Silver Banksian Medal. The gems of the selection were two plants of the very handsome *D. Phalaenopsis "Gatton Park variety,"* with white flowers of perfect form with the faintest lavender shade, and violet lines on the lip, the wholly white-flowered *D. P. hololeuca*, the pink-tinted *D. P. delicatum*, two or three dark forms, and three of the typical *D. Phalaenopsis* commonly known as *D. Statterianum*, which has much of the rose colour and form of *D. bigibbum*.

FRANCIS WELLESLEY, Esq., Westfield, Woking (gr. Mr. Hopkins), sent *Cattleya "The Canon"* (*Mantini* × *Dowiana aurea*), a secondary cross of *C. D. aurea*, which results in a flower resembling a finely-coloured *C. Mantinii* (*Bowringiana* × *Dowiana*) of the large size of *C. aurea*. The sepals and petals are rose-purple, the lip broad, ruby-crimson, veined from the base with golden yellow.

R. G. THWAITES, Esq., Streatham (gr. Mr. J. M. Black), showed a neat group, principally hybrids of his raising, for which a Silver Banksian Medal was awarded. We noticed several specimens of *Odontioda Thwaitesii* with flowers varying in tint from rosy-mauve to claret purple. A new hybrid was seen in *Sophrora-Lælia Ortoniana* (*S. grandiflora* × *L. Diana*), a dwarf plant with a large cherry-red flower in several tints, the base of the lip being yellow with purple lines. Others observed were several *Odontioda Bradshawii*, *Cattleya Fabia*, one of the showiest and most useful of *Cattleyas*; the new *C. Roupelliana* (*Hardyana* × *superba*), a very finely-coloured hybrid; and *C. Gaskelliana alba*.

H. S. GOODSON, Esq., Fairlawn, Putney (gr. Mr. G. E. Day), showed several fine specimens of *Cypripedium* H. S. Goodson, a large flower of good shape; the deep-red *Odontioda Devossiana*, and *O. Craveniana*.

MESSRS. CHARLESWORTH & CO., Haywards Heath, whose stand always includes some novelties, were awarded a Silver Flora Medal for an excellent group, in which the most remarkable plant was the unique *Miltoniada Harwoodii*, which was previously awarded a Certificate of Appreciation in its immature condition. It results from crossing *Miltonia vexillaria* and *Cochlidia Noezliana*. The flowers are both pretty and distinct, the equal sepals and petals being of a deep-red colour and arranged fan-like above the large, rose-tinted lip, with yellow crest. The next in importance was *Cattleya Luegeæ*, and the body of the group was made up of a showy selection, including some pretty, new *Odontoglossums*; varieties of *Lælio-Cattleya blechleyensis*, *L.-C. G. C. Whitelegge* var. *pallida*, *L.-C. St. Gothard*; *Cattleya Iris* varieties, *C. Chamberlainiana*, *C. Venus*, and *Zygopetalum Roeblingianum*.

MESSRS. SANDER & SONS, St Albans, were awarded a Silver Flora Medal for a good group of *Lælio-Cattleyas*, *Brasso-Cattleyas* and *Cattleyas*. Noticeable plants were the very singular *Cattleya Abeliana*, collected in Peru, with creamy-yellow flowers speckled with purple on the lip; a very dark form of *Lælio-Cattleya Berthe Fournier*, several of the new *Lælio-Cattleya Walter Gott* (*C. bicolor* × *L.-C. blechleyensis*), which in Messrs. SANDER'S original type has the shape of *Cattleya Iris*; *L.-C. Binotii* (*L. pumila* × *C. bicolor*), with elongated lip of a dark-purple colour; various hybrid *Odontoglossums*, and the distinct *Phaius Cooperi*.

MESSRS. STUART LOW & CO., Bush Hill Park, had the most extensive and varied group, for which a Silver Flora Medal was awarded. At the back were the bright-yellow *Oncidium oblongatum*, *O. Marshallianum* and other *Onci-*

cidiums, and in front were fine forms of *Cattleya Adula*, *C. Iris*, *Brasso-Cattleya Mrs. J. Leemann*, and the white and fragrant *Brasso-Cattleya Pocahontas*, *Cattleya Fabia*, a selection of *Masdevallias*, including the purple *M. calura*, *M. cucullata*, *M. muscosa*, *M. indifida*, *M. ephippium*, the yellow *Cypripedium Rosettii*, and other *Cypripediums*; *Cynoches peruvianum*, well-flowered plants of *Vanda Kimballiana*, the pink and white *Cœlia macrostachya* with three flower-spikes; *Cirrhopetalum Roxburghii*, *Bifrenaria tetragona*, the claret-tipped *Dendrobium sanguinolentum*, *Bulbophyllum biflorum* and other interesting species.

MISSIS. MANSELL & HATCHER, Rawdon, Yorkshire, secured a Silver Banksian Medal for a pretty group of *Lælio-Cattleyas*, together with finely-coloured forms of *Cattleya Iris*. *L.-C. rubens superba* is a handsome flower of rose-pink sepals and petals and magenta-purple lip, quite the best of its class; varieties of *Lælia pumila*, several *Brasso-Cattleyas*, the large, white *Anguloa eburnea*, *Oncidium Kramerii*, and selections of *Odontoglossums* and *Cypripediums* were also shown.

MESSRS. WILLIAM BULL & SONS, Chelsea, were awarded a Silver Banksian Medal for a group consisting principally of *Cattleya Pittiana*. With these were noted a light-coloured form of *Odontioda Wilsonii* (*vulcanicum* × *Pescatorei*), shown by R. G. THWAITES, Esq., at the last meeting, and a variety of *Cattleya McMasterii* (*Mendeli* × *Schilleriana*), first flowered by Sir Jeremiah Colman, Bart., in 1906, which has cream-white sepals and petals with well displayed purple front lobe to the lip.

G. RAE FRASER, Esq., Pigott's Manor, Letchmore Heath, Watford, sent a female flower of a *Catasium*, the species of which could not be accurately determined without male flowers.

MESSRS. JAS. CYPHER & SONS, Cheltenham, staged a small group of *Dendrobium Phalaenopsis*, *Sophrora-Lælia-Cattleya Medea*, *Miltonia vexillaria Leopoldii*, the dark and richly coloured *Cypripedium Tityus superbum* and other *Cypripediums*, *Masdevallia corniculata*, *M. Carderi*, *M. nidifica*, some *Brasso-Cattleyas*, *Lælio-Cattleyas*, and others.

MESSRS. J. & A. A. McBEAN, Cooksbridge, showed a fine dark form of *Cypripedium Germaine Opoix*.

MESSRS. STANLEY & CO., Southgate, sent a selection of the pretty *Cattleya iridescens* and *Lælio-Cattleya Walter Gott*, with less perfectly-formed flowers than those previously shown, the strain showing more of *L.-C. blechleyensis*.

Mr. E. V. Low, Vale Bridge, Haywards Heath, staged a small group, which included a good *Cypripedium King Edward VII.* (*Rothschildiana* × *nitens*), the clear, greenish-yellow and white *C. Rosettii*, *C. insigne Sanderæ*, *C. William Lloyd superbum*, *Cattleya Elvina*, and some well-flowered plants of *Cypripedium Fairrianum*.

AWARDS.

FIRST-CLASS CERTIFICATE.

Cypripedium Shogun (parentage unknown), from Lieut.-Col. Sir GEORGE L. HOLFORD, K.C.V.O. (gr. Mr. H. G. Alexander).—A noble flower, resembling in some degree *C. Aeson giganteum*, but with more white in the dorsal sepal. The dorsal sepal, more than 3 inches across, is pale yellowish-green, with the upper third white, all but the margin bearing dark purple spots. The sepals and petals are yellow, tinged and veined with brownish-purple.

AWARDS OF MERIT.

Cattleya Dirce magnifica (*Warsewiczii* × *Vulcan*), from Lieut.-Col. Sir GEORGE L. HOLFORD, K.C.V.O.—A beautiful and large flower of a rosy-mauve colour, the lip being rose-purple with very thin gold lines from the base.

Lælia Digestiana (*Jongheana alba* × *flava*), from WILLIAM THOMPSON, Esq., Stone, Stafford (gr. Mr. W. Stevens).—In form, this hybrid closely approaches *L. Jongheana alba*, the sepals and petals being white, and the lip dark yellow.

Phaius Cooperi, from Messrs. SANDER & SON.—The singular and pretty species which received a Botanical Certificate at the meeting held on January 11, 1910. The flowers are equal to those of *P. grandifolius*; sepals and petals arranged fan-like, mahogany-red, with narrow, white mar-

gin; the lip is white, with purple marks in the tube.

Cattleya Luegeæ (*Enid* × *Dowiana Rosita*), from Messrs. CHARLESWORTH & CO.—A grand flower, resembling a very fine *C. Fabia*. The broad sepals and petals are bright magenta-rose, veined with a darker tint. The broad, crimped lip of ruby-purple colour, has attractive gold veining from the base.

Fruit and Vegetable Committee.

Present: G. Bunyard, Esq. (Chairman); and Messrs. A. H. Pearson, J. Cheal, H. S. Rivers, W. Bates, W. Pope, A. R. Allan, H. Parr, C. Foster, W. H. Divers, G. Reynolds, P. C. M. Veitch, G. Kelf, F. Perkins, G. Wythes, J. Davies, G. Woodward, J. Harrison, O. Thomas, and A. Dean.

W. GAY, Esq., Higham, Canterbury (gr. Mr. Munday), exhibited a dish of Brunswick Figs from a tree in the open 200 years old. (Cultural Commendation.)

Mrs. PERRY, Ealing, sent a red, corrugated Apple under the name of Flowery Town. It was recognised as an old Devonshire variety of no merit.

MESSRS. DOBBIE & CO., Edinburgh, showed a Melon named Dobbie's Victoria. It is a scarlet-fleshed variety, and very handsomely netted. The fruit was rather over-ripe.

H.R.H. Prince of REUSS, Gera, Germany, exhibited several thick, long, whitish Cucumbers, under the name of Abundance, as grown in Germany for preserving purposes. The flesh was very thick, solid, and white. (Silver Banksian Medal.)

THE KING'S ACRE NURSRIES, Hereford, staged on the floor of the Hall a superb lot of fruit trees in pots, including Peaches, Plums, Grapes, Apples, Pears, and Figs. Many of the Apple and Pear trees were heavily fruited, and two vines of Black Alicante Grape carried some 16 bunches each. Of Peaches, we noticed *Thos. Rivers*, *Princess of Wales*, and *Marquis of Downshire*. Good Plums were seen in *Coe's Golden Drop* and *Late Orange*. Pears included *St. Luke*, *Beurre Balthé*, *Père Marie Louise*, *Penniston Duchess*, *Beurre Chageneau*, *Beurre Focqueray*, *Durondeau*, *Easter Beurré*, *Le Lectier*, *Doyenné du Commerce*, *Beurre Diel*, *Magnate*, and *General Todleben*. Of Apples, there were *Newton Wonder*, *Bismarck*, *Wealthy*, *Emperor Alexander*, *The Queen*, *Mrs. Phillimore*, *Cellini*, and other varieties. (Silver-gilt Knightian Medal.)

MESSRS. JAS. VEITCH & SONS, LTD., Chelsea, again exhibited fruits of their new Kitchen Apple *Rev. W. Wiles*, and also of the new dessert variety *St. Edmund*.

E. G. MOCATTA, Esq., Addlestone (gr. Mr. T. Stevenson), set up a singularly attractive group of Gourds, both ornamental and edible varieties. There were giant Pumpkins and Squashes, and smaller ones in a variety of forms and colouring. (Silver-gilt Knightian Medal.)

MESSRS. DOBBIE & CO., Edinburgh, staged 44 baskets of very evenly-selected Potato tubers. These latter were excellent specimens representing the best kinds in commerce. (Silver-gilt Knightian Medal.)

Mr. W. E. SANDS, Hillsborough, Ireland, showed a collection of Potatoes grown specially for seed purposes, the tubers being of medium size. (Silver Banksian Medal.)

MESSRS. G. MASSEY & SONS, Spalding, put up a large collection of vegetables, but the roots were not named. (Silver Banksian Medal.)

MESSRS. J. HARRISON & SONS, Leicester, showed their white Cabbage *Little Wonder*, a rather large-hearted variety, and a variety of Savoy.

A remarkable exhibit of uncommon vegetables was made by Messrs. SUTTON & SONS, Reading. The collection embraced *Couve Tronchuda*, various Spinaches, including *Perpetual*, *New Zealand*, *Green* and *Red Orache*, and the pretty *Chenopodium auranticolor*. Also various red and yellow Capsicums; *Green Corn Cobs* (*Maize*), *Chicory*, *Chirk Castle Turnips*, *Butter* and variegated *Runner Beans*, *Fir Apple Potatoes*, white and purple *Aubergines*, *Stachys tuberifera*, *Celeriac*, and others. This firm showed on another table a collection of *Runner Beans*, including *A1*, *Best of All*, *Prize Winner*, *Sutton's Scarlet*, *Mammoth White*, *Tender and True*, *Princess of Wales*, *Epicure*, *Earliest of All*, *Stringless*, and *Golden Butter*. (Silver-gilt Knightian Medal.)

Messrs. JAS. VEITCH & SONS, Chelsea, exhibited a fine collection of vegetables, the arrangement being excellent. There were capital heads of Celery of the varieties Superb White, Early Rose, Lulham Prize, and Major Clarke's Red. Invicta Tomatos, Ailsa Craig and Main Crop Onions, self-protecting Cauliflowers, Selected Red, Blood Red, Improved Black, Cheltenham Black and Globe Beets, superb Hollow Crown Parsnips, Lyon and Musselberg Leeks, Drumhead and Rosette Coleworts, Matchless Carrots, Hackwood Park Success Runner Beans, Autocrat Peas, and various Savoyes completed the display. (Silver-gilt Knightian Medal.)

NATIONAL VEGETABLE.

SEPTEMBER 28.—The first annual show of this newly-established society was held on the above date in the Royal Horticultural Society's Hall, Westminster. The hall was practically filled to its utmost capacity with produce from all parts of the country. Generally speaking, the quality of the vegetables was exceedingly good, but here and there, as might be expected in a gathering of such magnitude, some inferior produce was staged.

SOCIETY'S CLASSES.—Mr. W. GAIGER secured the leading award in the Society's class for nine distinct kinds. The exhibit was of outstanding merit, with practically every dish up to the best standard. Ailsa Craig Onions, Best of All Scarlet Runners, Up-to-date Potatos, Gladstone Peas, and Autumn Giant Cauliflowers were particularly good. The 2nd position was taken by Earl SPENCER (gr. Mr. Cole), who showed splendid Carrots, Onions, Parsnips, and Celery; 3rd, J. KEW, Esq., Loudwater, Rickmansworth (gr. Mr. T. Avery).

There were no fewer than 10 competitors in the Society's class for three distinct kinds, and the premier position was won handsomely by Mr. T. JONES, who had Autumn Giant Cauliflowers, Ailsa Craig Onions, and a seedling Potato, all in splendid condition. 2nd, Mr. W. G. WORTH, 26, Stratfield Road, Summerstown, Oxford; 3rd, Mr. JAS. SMITH, 29, Northolt Road, Harrow.

Twelve competitors entered in the Society's class for six vegetables, distinct, and Mr. H. KEEP, Aldermaston, Reading, was placed 1st, with a good exhibit; Mr. W. COLEMAN, Hunter Street, Buckingham, was 2nd; and Mr. C. F. JENDEN 3rd.

Mr. T. JONES, Bryn Penylan, Ruabon, was

TON and ASHTEAD SOCIETIES secured the prizes in the order named.

In the class for six dishes of Tomatos, distinct, the Duke of WELLINGTON, Strathfieldsaye, Berks. (gr. Mr. A. G. Nicholls), was awarded the 1st prize for Winter Beauty, Magnum Bonum, A1, Eclipse, Princess of Wales, and Satisfaction, all in grand form; Mr. J. HUDSON was placed 2nd, and Mr. E. BECKETT 3rd.

SMALL HOLDING'S CLASS.—A class was arranged for those having small holdings, not exceeding 20 acres or less than 2 acres.

The schedule required six distinct kinds to be shown in peck baskets as for market, and Cauliflowers, Turnips, Carrots and Potatos were imperative. Mr. T. KING, New Road, Bromham, Wilts., easily won the 1st prize, followed by Mr. A. E. FORTH, Bishopsthorpe.

Mr. T. KING was the only exhibitor in the class for six kinds of vegetables or salads in market baskets, and again he showed creditable produce.

THE "COUNTRY LIFE" CLASS.—This was designed to encourage the cultivation of the lesser-grown vegetables, and called for eight kinds to be chosen from a specified list printed in the schedule. There were five exhibitors, of whom



FIG. 105.—MESSRS. SUTTON AND SON'S EXHIBIT, AT THE NATIONAL VEGETABLE SOCIETY'S SHOW.

One regrettable feature in the display was the number of exhibitors who had not taken the trouble to name the varieties; this omission lessened the interest and value of the collections. The promoters of the exhibition deserve all credit for the grand produce which they brought together, but the arrangement of the classes left something to be desired, and it was difficult for anyone properly to enjoy or criticise the individual exhibits, owing to the accidental manner in which they were staged. Mr. Quick, the secretary, worked hard, but he required the assistance of more experienced helpers.

THE PRESIDENT'S CLASS.—The President, the Duke of Portland, offered prizes in a class for 12 distinct kinds of vegetables. There were four exhibitors, and the Duke's gardener, Mr. Jas. Gibson, secured the premier award with one of the finest groups he has ever staged (see fig. 103). Every dish was perfect. There were Superb Pink Celery, Autumn Mammoth Cauliflower, Prizetaker Leek, Tender and True Parsnip, Ailsa Craig Onion, Sutton's Black Beet, Selected Duke of Albany Pea, New Red Intermediate Carrot, Best of All Scarlet Runner, Dwarf Gem Brussels Sprout, Perfection Tomato, and Superlative Potato. The 2nd prize was won by Mr. J. HUDSON, Leicester.

1st for six Onions, having grand bulbs of Ailsa Craig. Mr. J. F. HALL, School Lane, Little Marton, Blackpool, won the 1st prize for two dishes of Potatos with Dalmeny Hero and King Edward VII. Mr. T. JONES was ahead for three dishes of Potatos, having handsome examples of The Provost, King Edward VII., and Windsor Castle.

Mr. J. B. ROBINSON, Great Barford, St. Neots, was 1st for six Parsnips; Mr. T. JONES for three Cauliflowers; Mr. J. McCULLOCH, Perth, for six Turnips; Mr. G. GASH, Grantham, for Scarlet Runners; Mr. H. KEEP for Peas; Mr. W. H. WILSON, Twyford, for a pair of Vegetable Marrows; Mr. J. F. HALL for a dish of Tomatos; and Mr. C. ABBOTT, Sunbury, for a dish of Shallots. Mr. T. JONES won the 1st prize for Celery with grand examples of Dobbie's Favourite Pink.

Mr. F. C. JENDEN, Spencer Road, Horsham, was placed 1st for four kinds of herbs.

Mr. W. MUSSON, Alfred Street, Grantham, excelled in the class for six Carrots with Hobbies' Intermediate, and Mr. T. JONES for six Beet with Dobbie's Purple.

The class designed by Mr. Alex. Dean, Chairman of Committee, for the Cottage Garden Societies of Surrey brought five exhibits, but they were of no great merit, SOUTH PARK and SIDLOW, BEDDINGTON and CARSHAL-

the Hon. VICARY GIBBS was easily 1st with Couve Tronchuda, Celeriac, Maize, Butter Beans, Salsify, Golden Ball Turnips, Seakale, Beat and Cardoon; 2nd, Mr. W. FOULKES, Amphill, and 3rd, Mr. W. J. LOBJOIT, Heston Farm, Hounslow.

NURSERYMEN'S CLASSES.—The Hon. VICARY GIBBS, Aldenham House, Elstree, Herts. (gr. Mr. E. Beckett), was the only exhibitor in Messrs. Wood & Son's class for a collection of vegetables. The group was varied in character, and there was not a single weak dish. Onions, Carrots, Cauliflowers, Parsnips, Potatos, Cabbages, Celery and Leeks were magnificent (see fig. 104).

Three growers contested the class in which the prizes were given by the same firm for six kinds, distinct, and the 1st prize was won by Mr. G. HOBDAK, Havering Road, Romford, who showed finely. The Right Hon. T. F. HALSEY, Gaddesden Place, Hemel Hempstead (gr. Mr. A. Folkes), was a good 2nd; Miss LANGWORTHY, Guy's House, Holyport, Maidenhead (gr. Mr. F. J. Brown), being 3rd.

Messrs. R. Sydenham, Ltd., Birmingham, offered prizes for a collection of 12 distinct kinds, and there were four competitors, of whom Earl SPENCER, Althorp Park, Northampton (gr. Mr. S. Cole), was placed 1st (see fig. 106). It was a handsome group, comprising Clayworth Prize

Celery, Autumn Giant Cauliflower, Lyon Leek, New Scarlet Intermediate Carrot, Up-to-Date Potato, Ailsa Craig Onion, Pragnell's Exhibition Beet, Hollow Crown Parsnip, and other kinds. The Rev. D. TURNER, Woburn Park, Weybridge (gr. Mr. A. Basile), was placed 2nd, and Mr. W. FOULKES 3rd. The 1st prize in this firm's smaller class was easily won by Mr. T. JONES, Bryn Penylan, Ruabon; Mr. E. DEAKIN, Hay Mill, Birmingham, the only other competitor, received the 2nd prize.

Mr. J. HUDSON was easily 1st for six dishes of Potatoes, having Windsor Castle, White City, King Edward VII., Ideal, Superlative, and Supreme in perfect form; 2nd, Mr. J. HUDSON; Mr. S. COLE 3rd. There were 16 exhibitors in this class, the prizes being given by Messrs. Clay & Son.

Mrs. DENISON, Little Gaddesden, Berkhamsted (gr. Mr. A. G. Gentle), for Parsnips; Mr. T. ANTHONY, Lea Rig, Broxbourne, for Golden Ball Turnips (perfect specimens); Mr. A. G. GENTLE for New Purple Beet; Mr. T. ANTHONY for Model Turnip; Mr. A. G. GENTLE for Golden Globe Onions; and Mr. J. HUDSON for two dishes of Potatoes. The quality of the produce throughout these classes was remarkably good.

Messrs. Dickson & Robinson offered prizes in the following 13 classes. Mr. T. ABBOTT, The Holme, Regent's Park, was 1st for two bunches of Moneymaker Tomato; Rt. Hon. Lord CURZON, Hackwood Park, Basingstoke (gr. Mr. F. West), for Premier Onion; C. F. RAPHAEL, Esq., Porter's Park, Shenley (gr. Mr. A. Grubb), for Hercules Peas; Marquis of NORTHAMPTON, Castle Ashby, Northampton (gr. Mr. A. Searle),

Nursery, Chelsea, contributed a varied collection representative of the most valuable vegetables in use at this season of the year. Among the notable dishes were Self-protecting Broccoli, Rosette and Drumhead Coleworts, Dwarf Green Curled and Early Dwarf Ulm Savoys, Rousham Park Hero, Ailsa Craig, and Maincrop Onions, Invicta Tomatoes, Red Globe Turnips, Lyon Selected Leek, Hackwood Park Runner Beans, Autocrat Peas, Hollow Crown Parsnips, with Radishes, Shallots, Salsify, Garlic, and other kinds. (Gold Medal.)

A magnificent group of vegetables was arranged by Messrs. SUTTON & SONS, Reading (see fig. 105). The outstanding features were quality, variety, and attractive arrangement, the latter demonstrating the fact that vegetables can be made extremely attractive. Among the less



FIG. 106.—THE FIRST PRIZE EXHIBIT IN MESSRS. R. SYDENHAM'S CLASS FOR COLLECTIONS, AT THE NATIONAL VEGETABLE SOCIETY'S SHOW.

The Marquis of NORTHAMPTON was 1st in Messrs. Clibran's class for three heads of pink Celery.

In Messrs. Barr's class for a collection of seven kinds of vegetables, H. T. TATHAM, Esq., Kendall Hall, Elstree (gr. Mr. W. Gaiger), was placed 1st, but Mr. HOBDA's 2nd prize exhibit was little, if any, less meritorious. Both showed good individual dishes, and arranged them well.

Mr. G. HOBDA took the lead in Messrs. J. Cheal & Son's class for a collection of eight kinds. His Onions, Cauliflowers, Celery, Scarlet Runners and Potatoes were especially good. Mrs. VON HARTMANN, Wimblesbury, Horsham (gr. Mr. T. Sparkes), was 2nd; and ALLAN SCOTT, Esq., Holbrook Park, Horsham (gr. Mr. T. Daney), 3rd.

Messrs. Dobbie & Co. offered prizes for individual dishes of vegetables, and secured splendid competition in all the classes. Mr. T. HETHERINGTON, Fourstones, Northumberland, won the 1st prize for International Prize Leeks;

for Giant Exhibition Scarlet Runners; Mr. RAPHAEL for Exhibition Leeks; Marquis of NORTHAMPTON for Prize Pink Celery; the Duke of NEWCASTLE, Clumber, Worksop (gr. Mr. S. Barber), for Perfection Intermediate Carrots; R. H. COMYNS, Esq., Heath Farm House, Watford (gr. Mr. H. Waterton), for Market Favourite Beet; Mr. T. JONES for Staghorn Cabbage Lettuce; Mr. RAPHAEL for Snowdon Cauliflower; Mr. H. WATERTON for Manchester Market Turnip; Mr. W. FOULKES for Sugar Loaf Cabbage; and Mr. F. WEST for Hollow Crown Parsnip.

Messrs. G. Massey & Son offered prizes for a dish of Universal Potatoes, Mr. A. G. GENTLE taking the lead; for Ailsa Craig Onion Mr. G. SCOURFIELD, Neath, Glamorgan, excelled; and for Improved Black Beet Mr. A. G. GENTLE secured the 1st prize.

NON-COMPETITIVE EXHIBITS.

Messrs. J. VEITCH & SONS, LTD., Royal Exotic

popular kinds were Gourds, Capsicums, Egg Plants, Indian Corn, Florence Fennel, Australian and American Cresses, while the more important crops were represented by Borecoles, Spinach, Scarlet Runners, Cucumbers, Potatoes, Carrots, Cabbages, Turnips, Mushrooms, Tomatoes, Onions, Beet, Brussels Sprouts, Leeks, Celery, Globe Artichokes, Parsnips, and Carrots. The entire collection comprised 113 dishes. The same firm also showed an excellent and interesting collection of Runner Peas. (Gold Medal.)

Messrs. BARR & SONS, King Street, Covent Garden, were represented by a handsome exhibit of admirably-grown produce. Standard Bearer and Solid Pink Celery, Crimson Globe, Cranston's Excelsior and Ailsa Craig Onions, green and white vegetable Marrows, Jersey Lily, Golden Nugget, and Covent Garden Snowball Turnips, Broad, French, and Runner Beans, Autumn Mammoth Cauliflower, Globe Artichokes, and Leeks were the more conspicuous. (Gold Medal.)

A remarkable collection of vegetable Marrows

and Gourds was arranged by E. A. MOCATTA, Esq., Woburn Place, Addlestone (gr. Mr. T. Stevenson). There were about 50 varieties of numerous sizes, shapes, and colours, the whole of the fruits weighing upwards of one ton. (Gold Medal.)

Messrs. R. VEITCH & SON, Exeter, had a representative group of seasonable vegetables. There were grand examples of Cranston's Excelsior and Ailsa Craig Onions, Lady Llewellyn and Davanha Seedling Potatoes, Red Garden Globe and Model Turnips, Veitch's Glory Tomatoes, Self-Protecting Broccoli, Western Express, Autocrat, and Gladstone Peas, New Intermediate Carrots, Sulham Prize Pink Celery, and climbing French Beans. (Silver-gilt Medal.)

Mr. W. E. SANDS, Hillsborough, Co. Down, contributed a collection of Potatoes, including such varieties as Eclipse, Up-to-date, Colleen, Irish Queen, Erin's Best, Emerald Queen, Shamrock, Midlothian Early, and Cottar. (Silver Medal.)

Garden sundries were shown by Messrs. Wood & Son, Wood Green. There were sprayers, manures, soils, and insecticides, as well as other useful appliances.

Messrs. D. DOWEL & SON, Ravenscourt Avenue, Hammersmith, sent a number of bowls suitable for growing Bulbs in moss fibre.

Mr. A. HAMILTON, Great Portland Street, sent handsome teak and oak plant tubs.

From the "Times" Experimental Station, Sutton Green, Guildford, the Director, Mr. C. Foster, showed a representative collection of market produce, including Onions, Potatoes, Carrots, Lettuces, Tomatoes, Turnips, Beet, Cauliflowers, and Swedes.

No fewer than 43 varieties of Potatoes were shown in separate baskets by Messrs. DOBBIE & Co., Edinburgh. The tubers were of superb quality, and handsomely staged for effect. Some of the best varieties were Duke of York, Table Talk, Factor, Sir John Llewellyn, Midlothian Early, British Queen, Lady Llewellyn, Chapman, Britannia, Exhibition Red Kidney, Queen of the Veldt, Climax, Herd Laddie, Edgemoor Purple, Crimson Beauty, King Edward VII., and Waverley. (Gold Medal.)

NATIONAL DAHLIA.

SEPTEMBER 27.—The Floral Committee made the following awards on this date:—

FIRST-CLASS CERTIFICATES.

Dahlia The Moor (Pompon).—The colour is deep maroon crimson, and the flower is slightly above the average size. From Mr. S. MORTIMER, Farnham, Surrey.

D. Loveliness (garden Cactus or decorative).—The colour is bright pink, the florets slightly veined with white. The flowers are developed well above the foliage on rigid stems. From Mr. CHARLES TURNER, Slough.

D. Kingfisher (Cactus).—A handsome flower of deep mauve colour and of best exhibition form.

D. Golden Eagle (Cactus).—The ground colour is yellow, a suffusion of rose and fawn running through the florets and increasing in intensity as the tips are reached. These two varieties were exhibited by Messrs. J. STREDWICK & SON, St. Leonards.

Obituary.

GEORGE STARK.—On Friday, September 23 after a painful illness, which lasted nearly a year, Mr. George Stark died at Great Ryburgh, Norfolk, in the 66th year of his age. Up to the time of embarking in business, deceased was a gardener. During recent years, the firm of G. Stark & Son has raised and introduced many new varieties of Sweet Peas. Mr. Arthur G. Stark, who was a partner with his father, will continue the business. H. J. W.

JOHN GARRETT.—We regret to record the death on September 21 of Mr. John Garrett, late gardener to Lord Redesdale at Batsford Park, and for the past six months gardener at Cornbury, Charlbury. He was seized with a stroke early in the day, and passed away without regaining consciousness. Mr. Garrett was gardener at Batsford Park for more than 24 years, leaving there when the place was let by Lord Redesdale. During his period of service at Batsford, the

gardens were practically remodelled, the kitchen gardens being freshly planted with fruit trees, new herbaceous borders made, and the famous wild-garden created, besides a range of glass-houses erected. The Bamboos at Batsford are unrivalled in this country, and the pleasure grounds contain many rare shrubs and trees. Previously to going to Batsford, Mr. Garrett was employed as foreman in the ornamental department at Kew Gardens. Whilst at Kew, he was associated with the late Mr. George Nicholson in compiling the *Dictionary of Gardening*. He was greatly esteemed by all who knew him, and his loss is deeply felt by his present and past employers. The funeral took place on Monday, September 26, at Charlbury Cemetery; all the employees on the Cornbury estate attended, and also many friends. He leaves a widow, but no family.

ENQUIRIES AND REPLIES.

AGED WALNUT TREES.—Can any reader of the *Gardeners' Chronicle* state the best method of improving the condition of some fine old trees, particularly Chestnuts, which I have known for 60 years in my garden? The Chestnuts are showing signs of decay, have scarcely flowered at all the last few years, and the leaves are much eaten by caterpillars. I am told that by a judicious system of trenching renewed life can be imparted to old trees. If any of your readers will give me the benefit of their experience in this work I should be most grateful to them. I may add that I am a daughter of the late Joseph Paxton, but have no recollection that my father dealt with any branch of forestry in his horticultural writings. *Rosa Markham, Tipton House, Chesterfield.*

—If the trees are attacked by a parasitic fungus in the trunk little or nothing can be done, but it is more likely that their decline is due to impoverishment of the soil. If the ground is covered with grass this should be removed from about the trunk as far as the branches extend; the ground should then be lightly forked over, taking care not to damage the roots more than necessary, the idea being to open up the surface of the soil so that air and moisture can enter. A top-dressing from 4 to 6 inches thick should be spread over the top, and this should consist of three parts good loam and one part rotted manure—preferably cow-dung. When the surface soil has been broken up some idea can be formed as to whether the roots have suffered through dryness—which happens frequently if the surface has become hardened through long continued trampling or other cause. This root-feeding is, as a rule, the most important part in tree renovation, but good may also be done by cleaning out dead and decaying branches, filling up holes in the trunk with cement, and sawing off decayed stumps. This method of tree treatment is fully described in an article by Mr. W. J. Bean, published in the *Gardeners' Chronicle* of April 14 and April 21, 1906.

ANSWERS TO CORRESPONDENTS.

CLOVER ON LAWN. *W. B. G.* Lawns and tennis courts on marly soils are exceedingly liable to be overrun by white Clover (*Trifolium repens*), which spreads rapidly by means of the creeping underground stems. Potash and phosphatic manures must therefore be avoided. You may apply at once 3 ounces of sulphate of ammonia per square yard of lawn, mixing it with sand for its more even distribution. In the early spring, say March, apply a liberal dressing of soot. This may have the effect of making the lawn appear unsightly for a time, but the grasses will quickly respond to the nitrogen of the soot and a dark-green grassy turf will result. The Clover dies out when excessive quantities of nitrogen are applied.

DAHLIAS. *J. Wiggins.* There are no signs of any insects or fungi having attacked the Dahlia shoots. This form of injury has been prevalent this season, and is probably due to physiological causes induced by unfavourable weather conditions. The same kind of injury has been prevalent on Salvias.

GOOSEBERRY DISEASED. *W. S. H., Letchworth.* The Gooseberry bushes have probably been attacked by the *Sclerotinia* disease, or "Die-back." Cut out and burn all dead branches from the bushes, and grub up and burn all dead bushes. If a bush or branch here and there "wilts" suddenly next summer, when in foliage, cut the branch out or grub up the bush before it is dead and destroy it by burning. There is no need to spray. Adopt the same measures in the case of the Currant bushes.

MAGNOLIA STELLATA. *J. E.* Magnolias do not like a too-free use of the knife. The best thing to do at the present time is to remove all dead and decaying wood, and defer a general thinning until early next summer. If the shoots are thick, a pointed hand-saw should be used, and the cuts pared round with a sharp knife, after which a dressing of coal tar should be laid on immediately.

MIGNONETTE. *A. H. D.* The appearance of the roots of the Mignonette suggests that the damage has been done by larvæ ("white grubs") of Chafer beetles. If on examination these are found, "Vaporite" may be employed to destroy them. The Violet leaf has been attacked by one of the "Leaf-spot" fungi; collect and burn the affected leaves now. Plants with young growths should be sprayed with liver of sulphur solution (1 ounce dissolved in 3 gallons of water).

Moss. *T. B.* The specimen sent is *Sagina procumbens*. Its presence usually indicates poor, dry soil. The best remedy is to fork it all out, give the lawn a good top-dressing with rich soil and sow fresh grass seed.

NAMES OF FRUITS. The names of fruits are unavoidably held over until next week.

NAMES OF PLANTS. *E. T.* *Campanula pumila alba.*—*W. M.* The double white flower is *Matricaria inodora* fl. pl. The *Michaelmas Daisy* was withered.—*Charles S. & Co.* The plant appears to be *Phacelia campanularia*, but no flower remained to assist identification.—*W. T.* 1, *Thuya orientalis* var. *pendula*; 2, *Tilia platyphyllos* var. *asplenifolia*; 3, *Acer platanoides* var. *laciniatum*; 4, *Taxus baccata* var. *adpressa*; 5, *Abies Lowiana.*—*W. H. D.* *Reineckea carnea* variegata.—*F. F.* 1, *Odonoglossum Andersonianum*; 2, *Oncidium flexuosum*; 3, *O. oblongatum*; 4, *Trichopilia coccinea*; 5, *Selaginella uncinata*; 6, *Pteris tremula.*—*H. A., Herts.* 1, *Bignonia radicans*; 2, *Calycanthus floridus*; 3, *Plumbago larpente.*—*R. P.* 1, *Cattleya Harrisoniana*; 2, *Cypripedium selligerum*; 3, *Miltonia Clowesii*; 4, *Dendrobium chrysanthum*. The other flower is *Cyranthus sanguinea.*—*R. W.* 1, *Coreopsis tripteris*; 2, *Spirea japonica.*—*L. B. W.* 1, *Veronica austriaca* *Prenja*; 2, *Aster amelloides*; 3, *Pteris cretica* var. *cristata*; 4, *Asplenium bulbiferum*; 5, not recognised.

OLEARIA HAASII. *K. M. P. G., Holnecott.* It will be quite safe to cut the *Olearia* back into the old wood. The best time to do this is early in March.

SYCAMORE TREES SPLITTING THEIR BARK. *J. E. H.* No disease is present. The trees have become bark-bound, and the bark would not yield when the trunk increased in thickness. If the trunks could be sheltered from exposure it would be an advantage.

TOMATO DISEASED. *J. Palmer.* The Tomato plant is covered with *Botrytis cinerea*, a common mould. Bordeaux mixture will be the best specific to employ, as this will keep off as well *Cladospodium* ("rust") and *Phytophthora* ("blight"). Slake 4 lbs. of quicklime in 12½ gallons of water; dissolve 4 lbs. bluestone (copper sulphate) in 12½ gallons of water (in a wooden pail), and mix the two lots together to make 25 gallons of Bordeaux mixture. Apply the mixture in a fine spray.

Communications Received. P. E.—A. B. C.—A. J.—J. H.—W. K.—J. G. & Co.—R. P.—J. O. M.—A. S.—Henri L. B.—J. F. H. Ltd.—J. O. B.—F. W.—W. P. H.—W. W.—H. W.—C. E., Stevenage.—A. R. H.—F. M.—W. A.—P. W. A.—C. R.—P. B.—J. D.—Rochester, U.S.A.—J. D.—G. M. T., Midlothian.—A. W. P.—W. E., Blyth.—E. C.—G. W. L., Wisbech.—W. J. V.—W. T., Lancs.—R. S.—J. E. B.—W. L.—T. S. W., Ltd.—H. W.—T. R.—B. C.—L.—H. J. C.—J. S. H.—Ivy.—The Continental Nurseries.—A. C. B., Reading.—W. B. H.—W. J. T. C.—F. J. K.—H. B.—A. P., Cork.—D. C. L.—S. A.—W. H.—T. B.—H. A. B.—G. M.—E. S.—S. A.—H.—R. J.—F. W.—F. G.—W.—John T.—W. C.—F. A. E.—J. Edwards (many thanks).



EXHIBITS BY MESSRS. WALLACE & CO. AT THE HOLLAND HOUSE SHOW, 1910.



THE

Gardeners' Chronicle

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POLLINATION OF "SPENCER" SWEET PEAS.

It is generally conceded, by workers amongst Sweet Peas, that, so far as this country is concerned, pollination owes little or nothing to insect agencies. It is held that fecundation is effected before the blossoms are fully developed, and therefore that no harm, in the way of cross-fertilisation from dissimilar varieties, can possibly take place. In the case of the old grandiflora type of Sweet Peas, this is undoubtedly the rule, but it is probable that, with some of the "Spencer" forms, insect agency in fertilisation has to be reckoned with. The trouble caused by unfixed stocks of many varieties of Spencer Sweet Peas is fairly general, although various reasons are assigned as to the cause. Apart from careless breeding, it is said that seed ripened in England is not likely to be untrue to type, because insects have not been found to be the cause of any trouble in inter-crossing. Now, the very fact that some of the new type of Sweet Peas are very poor seeders, is a proof that self-fertilisation is not so readily effected as is generally supposed. In the *Gardeners' Chronicle*, September 11, 1909, p. 185, it is stated in a note on the Sweet Pea seed crop:

"It would not be an exaggeration to say that some of the choicest Spencers do not yield a tenth of what the older varieties did, and this in a favourable season." Last year the crop was estimated at from one-twenty-fifth to one-thirtieth less than that which the older varieties were wont to produce, and the result of the harvest fully justified this estimate. An examination of a typical Spencer flower favours the assumption that the seed crop will always be small as compared with that obtained from the older type of flower, even under suitable climatic conditions. In many new forms, even in the bud stage, before the anthers have dehisced, the stigma may be noticed protruding from, and rising considerably above, the carinal pouch. The brush of hairs upon the style just below the stigmatic point, which, in the ordinary way, should sweep up the pollen from the apex of the carina, is also exposed in many instances before dehiscence. The large expanded alae admit of no protection of the stigma either from weather or insects, and the fact of its rising so well above the fallen pollen must make self-fertilisation not so general an occurrence as is desirable. Granted that the stigma is pollinated, it must often be done so meagrely that its unprotected condition must render the operation abortive in many cases. This, coupled with the open carina, which in wet weather becomes full of water, is, of course, the cause of the poor seeding capacities of the large-flowering Spencer form of Sweet Pea. Where seed-pods are formed, I believe that, with some varieties, insect agency is, in large measure, responsible for the process; and this is certainly the cause of inter-crossing, especially where different varieties of the same type of flower are grown near to each other.

I do not propose to deal with all the insects that visit the flowers of the Spencer Sweet Pea many of them can do no harm—but only to mention those the result of whose operations are found to be of some harm or good. There have been, I notice, many complaints this season regarding a small beetle which has been found in large numbers in the carina of the flowers. This is a member of the Curculionidæ group, and is probably *Apion striatum* or *A. pisi*: I have not been able to identify it accurately, but it is either one or the other of those two species. The beetle feeds upon the pollen, and very frequently does damage by nibbling at the reproductive organs, the result being that water is admitted to the legume, and causes it to rot at a very young stage. This beetle is of a purely anthophilous character, and as it is of no consequence in fertilisation, it need not be considered further in that respect; but it is certainly productive of damage, not only as noted above, but by causing birds to tear the flower to pieces in order to secure it as food. The blue tits (*Parus cœruleus*) seem to be very fond of this beetle, and I have watched them removing one of the alae and tearing open the carina in order to reach it, totally destroying the flower in the process. Delpino mentions the genera *Apis*, *Bombus*, *Eucera*, *Anthophora*, and *Xylocopa* as the chief fertilisers of the various forms of *Lathyrus*, but in Scotland I have only observed members of the second and third of these families at work upon the Sweet Pea, and always upon the Spencers, never on the old grandiflora forms.

The hive bee (*Apis mellifica*) has not a proboscis sufficiently long to enable it to deal with this flower, but, on the other hand, the humble bees (*Bombus*) are better equipped. I have watched their methods very closely this summer and autumn, and am convinced that they are undoubted factors in fertilisation. Dealing with the humble bees first, I find that two varieties of this genus cannot possibly effect fertilisation, although they are constant workers upon the flower. *Bombus terrestris* and *B. pratorum*, while they are large bees, as our indigenous bees go, have comparatively short but powerful proboscides. They always, when at work, alight upon the dorsal surface of the vexillum, inserting their proboscides right through the calyx into the interior of the carina at its conical point, and every blossom they visit will be found, upon inspection when the bee has finished, to have this little hole in the calyx. The other bees which I have noted as visitors to the flowers are *Bombus hortorum*, *B. lapidarius*, *B. agrorum*, *Anthophora pilipes*, *Psithyrus*, *Barbutellus*, and *P. vestalis*, each having a similar method of operating upon the blossoms. In contradistinction to the two first-mentioned bees, the others always alight between the alae, using the vexillum as a support while they are at work upon the carina and its contents. During these operations, the ventral part of the insect receives a dusting of pollen, which, of course, it carries to the next flower. Here it again alights immediately upon the exposed style, which receives upon its brush the pollen from the insect, and is therefore cross-pollinated. Provided the insect is working upon one variety of Pea, this is undoubtedly a good operation for the plant, but if other sorts are grown in close proximity, then we may expect to get mixtures. I have carefully emasculated the flowers of some "Spencers," and have had seed set by bees, carefully marking the blooms that were visited first by the insect immediately it had left the flowers of another variety growing near. I have also marked flowers that were not emasculated, but which also were visited first by the bees immediately they had left another variety, and where seed has set I think it is an undoubted example of cross-fertilisation by insect agency. I am not prepared at this stage to make any definite assertion, but I am personally convinced that crosses have been effected by these means. I have many instances under close observation, and it is noteworthy that seed did not begin to set upon my Peas until the bees began to operate regularly upon the blossoms. The climate of Scotland is by no means an ideal one for carrying on this work, the great difficulty being the ripening of the seed, more especially as this year the insects did not begin constant work upon the flowers until well in August. When crosses are effected even in this northern latitude by this method, we can readily understand how easily they may be obtained in the more genial climate of California. I have several varieties from seed ripened in that country, and find every one without exception full of rogues. I am strongly inclined to think that the bees are valuable agents in assisting the work of setting a good seed crop even in this country, but isolation of different colours of flowers may be necessary if the stock is required to remain perfectly true. This only applies to the Spencer types

with open carinæ and protruding styles, and this type of flower is becoming more common and more apparent, for nearly all the choicest of the newer kinds show more and more the above characteristics, and indicate increasing danger of inter-crossing by bees. The formation of some of the newest forms of Spencers renders insect agency imperative if a paying seed crop is desired, and, failing this, pollination by hand may be necessary. This, of course, does not apply to every Spencer Pea, but a little observation will readily show the varieties that require it. *George M. Taylor, Mid-Lothian.*

GRAPES AT MOOR HALL, HARLOW.

THE three varieties of Grapes shown in fig. 107 were grown in the same vinery at Moor Hall, Harlow, the residence of John Balfour, Esq. (gr. Mr. A. Jefferies). They were exhibited at the Bishop's Stortford Show, on August 10 (the companion bunches of Black Hamburg and Muscat of Alexandria are not reproduced), and gained the first prizes in the classes for two bunches of the respective varieties.

The bunches weighed 4 lbs. each, with the exception of Black Hamburg, which turned the scale at 3½ lbs. Most gardeners experience a difficulty in producing high-quality Grapes, and especially of these three varieties, in the same vinery, and Mr. Jefferies is to be congratulated on his success, as for the past three or four years he has gained first honours at this show for these varieties. The bunches of Madresfield Court were specially fine, as a sample sent by Mr. Jefferies testified. The vinery is 36 feet long and the borders, 10 feet wide, are outside. They are raised above the level of their surroundings, are 2 feet 9 inches in depth and well drained, so that copious waterings may be afforded during the growing season of the vines. As the borders are outside, little watering is necessary at other seasons. The variety Muscat of Alexandria was planted five years ago, but Madresfield Court and Black Hamburg have been seven years planted. Mr. Jefferies informs us that the front ventilators are never opened until the Grapes commence to colour, but fresh air is admitted as early as six a.m. at the top of the house, and shut off again in the afternoon, when the houses are well warmed with the sun's heat; a little fresh air is afterwards admitted throughout the night. Red spider usually makes its appearance on the foliage immediately after the bunches are thinned, but this pest is soon destroyed by the use of sulphur, which is puffed upon the undersides of the leaves by means of the "Ideal" Bellows.

SCOTLAND.

NON-PAYMENT OF PRIZE MONEY.

AN old-established Scottish horticultural society is this season in the unpleasant position of being unable to pay the prizes awarded at their recent show. Some of the prize-winners have received letters from the secretary to this effect, and considerable disappointment is felt on the subject. The society has suffered pecuniary embarrassment on former occasions, but it has usually managed to pay a portion of the money, and, in recent years, has paid the prize money in full. The position is worse this year than usual, and it appears to be due to the heavy loss incurred in connection with a programme of sports carried through on a separate day, but promoted by the society. A question has arisen regarding special prizes, and one competitor, who was awarded a sum of money given by a firm as a special prize, holds that he ought to receive this, as it was given for a specific purpose. It is likely that the society will recover its position; but the non-payment of prize money will prejudice the prospects of a future show. *S. A.*

NURSERY NOTES.

A PRETTY NURSERY IN S. WALES.

THE prettily-situated hardy plant nursery of Messrs. H. and W. Evans, at Llanishen, near Cardiff, has the great advantage of a natural stream of water flowing along one side. During a visit paid there at the end of July I observed *Aconitum Napellus* growing wild between the stream and the hedge. It had not been planted there, but was established, as it is in several of the woods in the vicinity of Cardiff and in the Ely valley. It is not often one sees such a rare plant growing naturally in a nursery

Oenothera speciosa rosea was a mass of pink, and had been so a month. Though somewhat rampant, it is a useful plant for the rock-garden when the wealth of May is over. *Veratrum nigrum*, with its spikes of blackish-red flowers 4 to 5 feet high, and large, ribbed leaves, is more handsome and rare than beautiful. *Astilbe "Nuée Rose"* was in full beauty, and has paler pink, much lighter and more graceful inflorescence than the newer "*Queen Alexandra*" and "*Peach Blossom*." *Campanula lactiflora* and its variety *alba* were very noticeable—they form excellent border plants, especially in half-shade. So were the beautiful creamy Papaveraceous annual *Platystemon californica*, the handsome

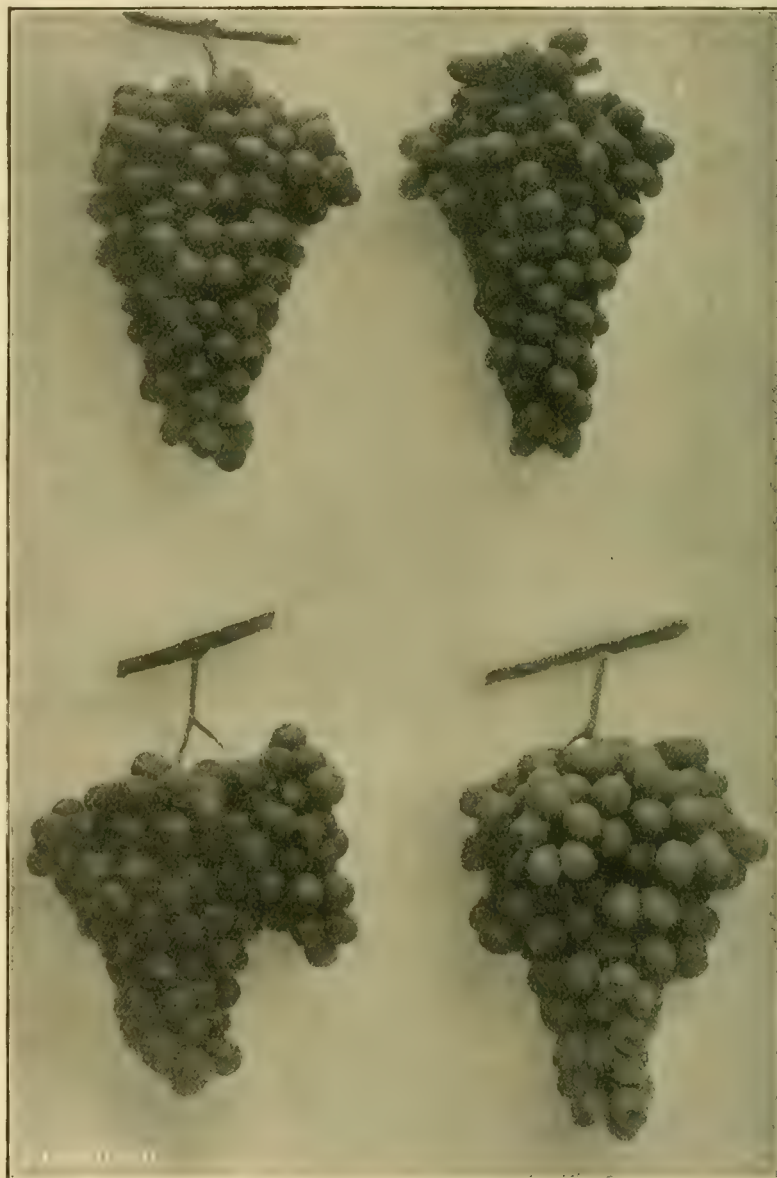


FIG. 107.—GRAPES GROWN AT MOOR HALL, ESSEX. TOP TWO BUNCHES, MADRESFIELD COURT; BOTTOM (RIGHT-HAND), MUSCAT OF ALEXANDRIA; (LEFT-HAND), BLACK HAMBURG.

ground, though occasionally such a plant as the American *Veronica peregrina* is to be found as a weed. I have never seen this small *Veronica* except as a weed in gardens. Some 15 years ago I remember observing clumps of *Trollius europæus* growing thoroughly wild by the rapid, though muddy, River Taff, only a mile or two above the great city of Cardiff. It seemed strange to see a sub-Alpine plant in such a place and so close to the sea; and doubtless it there attained its most southern limit in Britain. *Sibthorpia europæa* is also found in the vicinity.

There were many interesting plants in bloom in Messrs. Evans's nursery, and the rich, red soil seemed to suit most of them. On the rockery,

blue *Platycodon Mariesii*, the *Kniphofia (Tritoma) rufa*, only 2 feet high, and two new hybrids, "*Goldelse*," pure yellow, and *Torchlight*, coral red, which form showy plants for the front of the border or large rock-work. The Rose "*Lady Godiva*," in all respects resembling the popular "*Dorothy Perkins*," but of a pale pink like the Carnation "*Duchess of Fife*," will be a favourite climbing Rose when better known.

Among other beautiful plants observed were *Potentilla Tonguei* (orange), *P. Dubia*, *Viola cornuta purpurea*, the yellow *Cistus algarvensis*, *Lindelia spectabilis*, and *Geranium lancastriense*, a dwarf and pretty form of *G. sanguineum* discovered in Lancashire. *H. S. T.*

ALLOTMENTS.

FEW better things have been done by those responsible for the government of our towns than the acquisition of land in their immediate neighbourhood for the purpose of allotments. A 10-rod plot or more means very much to the small householder, more than the cottage garden does to the cottager a hundred miles away in the country. Although not so picturesque as the cottage garden, an allotment is often a far better example of the splendid results of well-applied intensive culture. The holder, in the first place, has a keen liking for his plot; he quickly realises that he must get from it as much as he possibly can, and so he brings to bear a natural intelligence and a knowledge of his special requirements. Help and advice are received from more experienced holders, whose crops serve the less-experienced also as valuable object-lessons. It is the ability to use all produce to advantage that renders these allotments more useful than the small holdings away in the country, where it is extremely difficult to dispose of anything other than that required for home consumption. These remarks are the outcome of occasional inspections of a 15-acre field containing over 200 allotments. It is interesting and pleasurable to see many dozens of men busy on their plots after their ordinary day's work is done, and the excellent produce gives evidence alike of hard work, successful cultivation, and an intelligent system of cropping. This last is seen in the selection of the species and varieties both of vegetables and fruit that give the best results in a limited space, and also, in the case of vegetables, those which come most quickly to maturity and, consequently, give place quickly to other crops. Nearly all the vegetables in the 15 acres looked remarkably well, except Potatoes, where spraying had been neglected, and Carrots (the Short Horn and stump-rooted forms were good, but Main-crop varieties evidently wanted ground more deeply worked and lighter soil). Gooseberries and Red Currants are the favourite fruits, with occasional Apples and Plums in bush form. The necessity for protection against frost and birds is responsible for the absence of Strawberries, whilst Black Currants have been destroyed by "big bud." If, however, a general inspection of allotments led to the conclusion that an excellent system of culture was generally maintained, a chat with the holders gave the impression that somewhat hazy ideas still exist as to the various fungoid and insect pests with which they are troubled, and those who have the responsibility of lecturing to allotment holders during the winter months might give some attention to the subject of plant-disease. The advisability of spraying for the Potato disease and the vigorous application of soapsuds for aphids were recognised, but minute thrips on Peas were stigmatised as blight, and the agency of fly in producing the Onion maggot, also leaf-boring maggots of the Celery, Parsnip, and other things do not appear to be generally known, nor that the familiar Daddy-long-legs (Tipula) is responsible for the leatherjacket grub. The fact that fruit is very much less grown than vegetables is responsible for a limited knowledge of enemies, but pointing out the big gathering of red spider on Gooseberry foliage and the larvæ of *Lampronia rubiella* eating out the heart of Raspberry shoots naturally led to queries as to the best means of combating the pests. Touching very briefly on flowers, it may be noted that there is a growing tendency to include a few in most of the allotments, and it is a pleasurable evening feature to see the head of the family trudging homewards with a posy on the top of his basket of vegetables, and the children with a small nosegay tightly clasped in hand. The commoner perennials are mostly grown, and annuals such as Sweet Peas, Mignonette, Virginia Stocks, and Godetias. A. G. B.

PHŒNIX PARK, DUBLIN.

WHEN visiting Ireland, the writer was prepared to find a "green isle" in the sense of luxurious vegetation, but was hardly prepared for its very general distribution, nor for the excellence and rarity of the subjects found in somewhat common cultivation. Calling at Whitefields, the headquarters of the Parks and Gardens Department, under his Majesty's Board of Works, Mr. Robert Anderson conducted me through the adjoining grounds. First of all, a grand plant of *Taxus Dovastonii*, with a circumference of 50 yards, arrested my attention, and near this was a handsome specimen of Perry's Silver Weeping Holly 20 feet high and about 12 feet through at the base; a pair of Gold English Yews, which might be called gigantic, and a *Taxus adpressa* 16 feet high and 32 yards in circumference gave further delight. Next to these was a beautiful plant of the rarely seen *Swammerdamia antennaria*, the flowers of which are scented like new-mown hay—this plant is 23 yards in circumference. A very ornamental, somewhat gnarled *Cupressus macrocarpa*, probably one of the earliest introduced, measures, at 3 feet from the base, 24 feet round. This tree was rather badly damaged by a severe storm in 1902, when many fine trees were damaged in this country.

A plant deserving of far more general culture is *Muehlenbeckia complexa*, which Mr. Anderson has treated in a novel way, planting it in a large excavated tree stump standing a few feet from the ground. The plant stands 9 feet high, is bushy and highly ornamental. Other specimens are used largely in a small state as dot plants in the flower-beds.

Ilex diphyrena is a very distinct variety: a tree of this Holly was 20 feet high, and a fine tree of variegated Turkey Oak, 30 feet high, is a near companion. This latter tree is somewhat peculiar, having developed a broad platform-like base, with a column-like growth as super-structure. A bush 16 feet high of *Berberis fascicularis* is attractive, and this too should be more generally grown.

Corypha australis (20 feet high and 20 years old), *Buxus balcanica* (20 feet), *Choisya ternata* in masses, *Piptanthus nepalensis*, and *Magnolia conspicua* in tree-like dimensions can but be named. The Whipcord Thuya—*Thuja orientalis pendula*—not often seen, is represented by a good specimen, and near it the not very sweetly-odorous "*Torreya myristica*." *Ilex Perado* and the Cork Oak (*Quercus Suber*) are fine trees, and a good tree of the double-flowering Horse Chestnut is much prized. Lest our catalogue should become too lengthy, though there are many interesting subjects among the shrubs worthy of note both at Whitefields and at the various official residences, with the bare mention of a clean, handsome plant of *Cupressus torulosa*, 35 feet high, and a plant of *Drimys Winteri*, I will conclude my account of this part of the park. Passing through nursery and store grounds, large quantities of home-grown Narcissi and Tulips are seen, the bulbs being equal to the best produced in Holland.

Phoenix Park is a Royal possession of more than 1,700 acres, traversed by 20 miles of splendidly-kept roads, excellent alike for its commanding position and its variety of scenery. Beautifully wooded, it provides the ideal retreats for the various official residences and Government buildings, and southward the horizon is broken by a fine view of the Wicklow Hills.

The most frequented spot in the park is undoubtedly the "People's Gardens." The scene, in its gorgeous loveliness, made a deeper impression on me than anything in the way of summer bedding recently seen. Probably the boldness and the extent (20 acres) of the display are factors in creating this impression, for although there is no sense of crowding, there being great green-sward stretches intervening between the beds, yet there is a massiveness which gives an air of noble grandeur.

Carpet bedding is represented by some very neat examples, and a large bed of succulents is

interesting. A very effective, oblong bed of considerable dimensions contained the popular Begonia "Major Hope," mixed with white Viola Violetta, dotted with large plants of Fuchsia Mrs. Marshall, and bordered with *Koniga maritima compactanana*. A similarly shaped bed, equally beautiful, had a groundwork of *Heliotrope* Lord Roberts and *Centaurea candidissima*, dotted with *Sutherlandia frutescens* and *Eucalyptus cordata*. Rather striking, too, was a mound-bed containing Ivy-leaved Pelargonium Mme. Crousse, the plants being a yard high and mixed with *Artemisia arborea*, interspersed with *Eucalyptus cordata*. A combination which was especially pleasing was of densely-flowered plants of *Bougainvillea glabra* and *Cassia corymbosa*. The trained plants of *Heliotropes*, 7 feet high and 4 feet across, were magnificent, whilst *Streptosolen Jamesonii* and *Calceolaria amplexicaulis* were splendid in pyramidal and bush form. *Lantana delicatissima*, trained in umbrella form over a ground of red Salvias, was also attractive, and among smaller dot plants which were conspicuous are the *Muehlenbeckia complexa* already referred to, *Acacia lophantha* and *A. verticillata*; *Gnaphalium microphylla* and the graceful Brazilian shrub *Jacaranda mimosæfolia*.

Reluctantly leaving this wealth of floral beauty and sorely tempted to look back, a glimpse of colouring over the brow of a shrubby eminence diverted my attention. Imagine a bed nearly resembling the letter V, 40 feet wide at the one end and in length about 100 feet, surrounded largely by plantations of evergreens—itsself a literal mass of Dorothy Perkins Rose—some on Larch tripods 12 and 14 feet high, a greater number being standards 6 feet tall, the groundwork of standards and tripods forming a beautiful undulating, unbroken display which baffles description. Such are a few of the many interesting features to be found in Phoenix Park, which reflect the greatest credit on the able superintendent, Mr. Robert Anderson. L.

A JOURNEY TO JAPAN.

(Continued from page 212.)

THE JAPAN IRIS AT HOME.

IT was the middle of June when I arrived in Japan, the time when the Japanese Iris, *I. Kämpferi* (Hano Shobu) is at its best. I stayed a few days at the International Buildings at Yokohama, until I had procured my Japanese lodgings at Tokyo. I walked along the shore to the south, enjoying the vegetation and passing nurseries containing all sorts of ill-treated plants. After about an hour's walk, I was very pleased to find myself amidst a most wonderfully laid-out Iris field, the road leading into a gentleman's garden, who throws open his garden to the public. The generous owner is Mr. T. Hara, and his Iris garden is only a part of his large gardens and park. The house is situated on a steep hill facing to the sea, whilst a little valley between the hills is laid out as a Japanese Plum (*Mume*) garden, and planted with herbaceous plants and shrubs. Near the Iris garden is a large lake with fine Water Lilies, and a pond with *Nelumbiums*. The garden contains a large number of summer-houses and shelters of many different kinds, and the whole forms a most artistically laid-out country seat which exhibits much taste. The Iris garden lies on either side of a main road, which is about 3 feet higher than the field, and the Irises are planted, for the most part, in regular beds with pathways between them so that the full beauty of the rich collection may be easily enjoyed. Although they are planted in regular beds and generally in separate varieties, mixed beds being only now and again interspersed, the whole field of colour was a most harmonious sight, and it did not give the impression of an assortment, but of a most wonderful picture. This is the way that Irises should be seen.

Between Yokohama and Tokyo, near Kamata Station, are the Iris grounds of the Yokohama Nursery Co.; they are planted in a manner that produces showy effects for the numerous visitors. But Horikiri, near Tokyo, and Yotsugi are the special places to go to enjoy Irises and see rare and fine novelties not grown elsewhere, but though Irises are also to be seen all along the Rice fields, fruit gardens, and round the lower parts of the town suburbs. Leaving Tokyo by boat, and proceeding up the river Sumida, Kane-gashuty boat station is reached in about half-an-hour, and in another half-hour's walk or riksha-ride the very home of the Irises is reached. At Horikiri are several Iris gardens; the Kankayen is a flat garden, but the Mushiyeen is of more interest. Low hills surround this

Riubi, deep purple and pale veins and yellow centre; this six-petalled variety is about 8 inches in diameter. Renjo-no-tama is a six-petalled, older variety of pale blue with white centre and well-fringed petals. Asakagura is a six-petalled novelty of a soft mauvy-red with blue centre and well-fringed petals; the stigmatic leaflets are pale blue, with violet margins. Tenjo-no-Kamuri is a very double variety with 15 to 20 large petals and six to eight stigmatic leaflets, the stamens are also metamorphosed to leaves. The colour is of a peculiar mauve-red with white. Hatsu-Kamuri is a novelty of deep velvety-blue colour with very marked soft-blue veins. It has three very large petals. Shiso Kajin, of very soft blue colour, has three very large petals. Shushi is a three-petalled novelty of deep velvety-blue col-

ours many queer Pines and fine Wistarias, besides other plants, and is of a rather less artistic appearance, but the Irises are the finest I saw. The firm also sells two collections of colour pictures of their Irises, each containing 50 varieties, one which includes the new sorts costs about 5s., the other, containing the 50 older varieties, 4s. The illustration in fig. 108 shows 16 of the finest varieties, the names being as follows:—1, Fuji no Akebono (Mount Fuji at Dawn); 2, Sazanami (Rippler); 3, Daishori (Great Victory); 4, Akashi none; 5, Surino Lashi kaki; 6, Kyonishiki (Brocade); 7, Goshō asobi (Play in the Imperial Palace); 8, Manazura (White-naped Crane); 9, Enbinowaza; 10, Godaishū (The Five Large Continents of the Globe); 11, Mine no matsukaze (The Wind through the Pine Trees on



FIG. 108.—VARIETIES OF IRIS KÄMPFERI AT THE KANKAYEN GARDEN.

little garden, planted with curious-shaped old Pines. Tea is served in sheltered huts and under lofty covers. It is not after European taste nor are the large Beans (Soraname) boiled in salt water, though the biscuits (Layaku) are quite palatable. The best Irises are at the Kankayen (yen-garden), where Pines, many hundreds of years old, have looked upon many generations of Iris growers. The Pines are quite worth seeing when the Irises are not in bloom. This garden and the fields surrounding it are devoted strictly to Irises. The present owner was very pleased with the interest I showed in his plants, and he gave me of his best treasures. I mention a few of them.

Karako asobi (play of Chinese boys) is a deep cobalt blue flower with light, blue veins and yellow margin. The stigmatic leaflets are very much crested and of a deep blue, and make the flower appear to be double. It has six large petals. Sloroku-no-Asobi is of a pure, deep blue colour, Musashi garva (the river Musashi), with three very large petals; Hoojo, purple on light ground;

our; the three smaller inner petals are of deep velvety-maroon. O Yedo has three large petals of uniform sky-blue colour. There were also many varieties of great beauty not yet named.



KEY TO FIG. 108 (SEE TEXT).

The richest collection and the finest varieties I found at the Yoshinoen, at Yotsugi, about half-an-hour's walk from Horikiri. This garden con-

a Hill); 12, Saizo-no-en; 13, Sazanami; 14, Trojiman (Pride of Colour); 15, Karino tamazusa (Communication brought by Wild Geese); 16, Hotennoteri.

Kyo-nishiki has nine petals, the six outer ones standing low down, whilst the three inner ones rise higher up and form quite a second whorl. The flower is of deep velvety colour. Although we have a very good collection of varieties of I. Kämpferi in Europe, the general exporting firms and dealers in Japan only send to Europe varieties which are grown here by the peasants along their Rice fields for the sake of the flowers which are cut as buds and brought into the towns for sale. In the gardens at Horikiri and Yotsugi there are many fine varieties which are not sold at all, but are kept specially for the sight-seeing visitors, who pay five sen (a penny) for entry. They sip some tea, and the proprietors of the gardens make a considerable income from these sources. *Fr. Henkel, Tokyo-Hongo*

(To be continued.)

THE ROSARY.

SOME OF THE BEST HYBRID WICHURAIANA ROSES.

PERHAPS no other climbing and creeping Roses came into favour so quickly as the varieties of *Wichuraiana*. Dorothy Perkins and its many beautiful sports afford a good variety, but I wish to draw attention to others equally beautiful, and, in some cases, derivatives of *R. Wichuraiana*. The variety *Gardenia* provides blooms of clear, golden-yellow while in the bud stage, and is also one of the sweetest-scented Roses in cultivation. It is to be regretted that the petals, when expanded, lose their golden-yellow shade so completely. A very promising novelty is seen in *Aviateur Blériot*, which is the result of crossing William Allen Richardson with *Rosa Wichuraiana*. Not only is it quite distinct, but the petals retain their colour. It also has the great advantage of bearing large trusses; I have known William Allen Richardson to be very erratic in growth; this infusion of *Wichuraiana* blood is, however, not only likely to make its offspring more hardy, but, probably, a more reliable grower. A pleasing, primrose-yellow Rose is found in *François Foucard*; this variety also flowers again later in the season, but by no means so freely as in early summer. One of the very earliest to bloom, and one that continues to flower late, is *Réné André*, a cross from *L'Idéal*, from which it derives a pleasing perfume. Much of the unique shading found in *L'Idéal* is seen in the hybrid. It makes a perfect standard plant, and always gives satisfaction. A cross with that grand decorative Tea Rose, *Souvenir de Catherine Guillot*, named *Marco*, has been very good with us; carmine, orange and ruddy gold are intermingled in the petals. Ernest Grandpierre (*Wichuraiana* × *Perle des Jardins*) is good among the paler yellows, but the flowers are small and in corymbs. A selection of this section includes *Joseph Billiard*, *Alexandre Trimmouillet*, *Edmund Proust*, *Elisa Robichon*, *Evergreen Gem*, *Leontaine Gervais*, and *La Perle*. A. P.

PLANT NOTES.

CHLOROPHYTUM COMOSUM.

THIS species, which is figured in *Natal Plants*, tab. 279, by Mr. J. Medley Wood, is flowering in the gardens of J. S. Bergheim, Esq., at Belsize Court, Hampstead (gr. Mr. Page), the home of many interesting species. The plant is noteworthy in that it records the species from the neighbourhood of Lake Albert, Central Africa, the habitat given in *Natal Plants* being Natal, Manda 1,800 feet alt. and near Durban 150 feet alt. It is related to *Chlorophytum elatum*, but is distinct in some respects. The plant was imported from the Albert Nyanza amongst roots of *Crinum giganteum* Rattrayi and remained dormant until this year, when it flowered. The plant is of ornamental growth, the radical, linear, deep-green leaves being about 2 feet in length, and producing a branched inflorescence about 3 feet long, the small, white flowers, which do not last long, following each other in succession and producing occasional prolific growth.

Mr. J. Medley Wood, in the description accompanying the plate in *Natal Plants*, remarks: "The plant is really prolific, propagating itself very copiously by these 'tufts of linear leaves,' the weight of which bends the stem or branches to the ground, where they readily take root, and the plant bears seeds very sparingly. The group of some dozens of plants from which the specimens were taken for drawing and description was observed for several weeks, but not a single capsule was formed."

This is not an uncommon circumstance with plants giving prolific growths, and in which this means of propagation and reproduction by seeds are alternative means. Thus probably the more numerous the prolific growths, the

less the need, or the power, to produce seed capsules, which would be more freely produced if for any reason the growths were not made. As seen in Mr. Bergheim's specimen, the flowers, generally in fours, are so disposed that the first to flower has a longer pedicel than the others, and some of the former show the ovaries more developed than in the flowers with shorter pedicels. If the plant were in danger of perishing and without the means of perpetuation by prolific growths, it would probably mature seeds. J. B.

SONERILA.

OF the numerous species which constitute the genus *Sonerila*, there are, perhaps, only half-a-dozen worthy of cultivation. *Sonerila margaritacea*, *S. orientalis* and *S. speciosa*, with their varieties, and the hybrids—*François Marchand*, *Mme. Alesch*, *Silver Queen*, and *Souvenir de Mme. V. Houtte*, are a selection which are worthy of a place in any collection of stove plants; their ornamental foliage, dwarf, free-growing, procumbent habit making them especially useful for marginal rows, or for furnishing where space does not allow the use of larger subjects. The chief essentials to success in the culture of these plants are: a free, open compost, abundant supplies of moisture at the root and in the atmosphere; shade from strong sunlight, and a stove temperature. The stock may be increased by means of cuttings or by seeds; cuttings root readily if plunged in bottom heat. When these are rooted, they should be potted up singly into small pots, except that, in the case of the small foliage varieties, several plants in a pot will give a better effect. Fred. W. Jeffery, Langside, N.B.

NOTICES OF BOOKS.

GARDEN PLANNING.*

THE author confines himself mainly to the treatment of garden plots of limited area. The volume consists of about 300 pages, and is illustrated by 150 drawings and plans by the author. In a general way it is an excellent treatise, comprehensive, clearly written and showing, for the most part, an intimate acquaintance with the many practical details necessary in the laying-out and planting of small gardens, particularly where expense is the main consideration.

The work, divided into sections, commences with a discussion of the principles of garden design. Then in sequence follow discourses upon the site, the treatment of flat surfaces and slopes, the walls and drives and so on to the chapters on special sections, such as the rock-garden, water garden, and vegetable garden.

The text is interspersed with plans, sectional details and elevation drawings of subjects dealt with in the text. An appendix contains lists of shrubs and hardy flowers, with particulars relating to their height, colour of flower, and time of flowering.

Knowing the difficulties which attend the making of gardens of very limited space, as is common in town and suburban districts, I hesitate to criticise the book, for the author has evidently studied the matter well. But judging from most of the plans illustrated, he fails to show any striking originality of treatment of rectangular areas; on the contrary, all the designs are of so similar a stamp that they betray a poverty of ideas. It is assumed that a space bounded by straight lines must necessarily be laid out in a so-called formal manner with straight paths, borders, symmetrical beds and so on. It is surely a mistake to suppose that the best effects of a garden landscape, however small it may be, are derived solely from this style. Much as the meaningless, curved paths in flat-surfaced gardens are objected to, the equally meaningless repetition of straight lines are not conducive to such beautiful effects as are obtained by planting

in irregular masses. Moreover, if there is any art in making a small place appear larger than it really is, the straight-line treatment is not the way to produce this illusion.

An irregular treatment of planting in masses gives varieties of light and shade, besides diversity of skyline that cannot be obtained by a straight-line treatment, as the absence of in-and-out planting reduces all to one value.

The most skilful designer of gardens is he who can adapt either or both styles according to the particular circumstances of the case, and, at the same time possesses such a knowledge of his planting material that he can vary the appearance of his finished gardens, although they may be of the same size and outline and under the same conditions of soil and situation.

The lists in the appendix should have been more select; mere lists are bewildering to the amateur, and the columns of names in nurserymen's catalogues are hidden mysteries to the average possessor of small gardens.

Still, the book is one of the best of recent production, and cannot fail to be a useful aid to the ever-increasing class of small gardeners. W. G.

THE ALPINE GARDEN.

SAXIFRAGA VALDENSIS.

I HAVE been sitting in front of this brilliant and precious little species for some hours, endeavouring to compile a description which shall enable the casual gardener to know whether he possesses the true plant, or merely the form of *S. cochlearis* which invariably masquerades under the name of *valdensis*. The distinction between *S. linguata* and *S. lantoscana* is also that between *S. valdensis* and *S. cochlearis minor*. *S. valdensis* is a very rare and curious species, absolutely distinct, and limited in its range, as its name implies, to a small tract in the Cottian Alps. Here it occurs only as a high Alpine, at some 7,500 feet, in cliffs of disintegrating granite, exposed to the fullest heat of the sun. *S. cochlearis* is much more common within its range, which, however, is limited to the eastern valleys of the Maritime Alps, and a few rare stations on the seaboard. It varies very greatly in form, and its miniature variety is the plant universally sold as *S. valdensis*. Yet differences as wide in botany as in geography separate the two plants, though Maw himself fell into this common confusion when he recorded *S. valdensis* for the cliffs above Tenda, in the very heart of the *cochlearis* country. But these rare species never intrude upon each other. *Cochlearis* occupies the valley of the Roja, *S. lantoscana* that of the Vésubie, *S. linguata* the upper glens of Tenda, *S. florulenta* the high range between the Ciriégia and the Fenestra. *Cochlearis*, too, is utterly distinct from *Valdensis* in habit and requirements; instead of being a high Alpine, it is a lowland plant, possessing the blazing valleys of Briga and the Roja, from which it hardly ascends; instead of being a granite plant it follows the usual rule of its kindred in preferring the mountain limestone.

In the first place, the cushions of *cochlearis*, however compact they may look, are always much looser and hollower in texture than those of *valdensis*; they also stand much higher from the ground. Each rosette expands by itself and leaves room for the others; a tidy, grey hillock results, which, however, it is easy to part. *S. valdensis*, on the other hand, makes the densest, hardest and most impenetrable dome that I know of among the silver Saxifrages. The colouring of *cochlearis*, in all forms, is of a light green, turned grey with a sort of silvery dust, which becomes most definite at the edges of the leaves; that of *valdensis* is a darkish blue-grey, with very definite blobs of silver punctuation round the margin of each leaf. The leaves of *cochlearis* are very thick, they stand up, broaden abruptly at their tips, and so abruptly fatten that their ends often give a diamond-shaped effect. The leaves of *valdensis* are not so thick, and

* *Garden Planning*, by W. S. Rogers. (London: T. Fisher Uawin.) 1910.

usually seem longer than those of cochlearis minor; they are more strap-shaped, with a rather smaller expansion, and, instead of standing up, lie so tightly pressed back upon each other that the cushions of *S. valdensis* present no point to the hand laid upon them. Seen side by side, no one could possibly confuse the two plants, and yet it is not easy to analyse the obvious differences that separate the rare, precious, definite species from the pretty little common varietal form. I cannot speak yet, unfortunately, as to the flowers of *valdensis*, for though, when I collected it, each plant was busily unfolding red little croziers thick with glandular hairs, all these "went off" in transit, leaving their beauty unchronicled for another year. In cultivation, *S. valdensis* has, however, already proved its value, and in many gardens hotter than mine will have an added value from its predilection for fierce sun-heat, and also, in yet other gardens, from its preference for primary formations, so rare among Silver Saxifrages. *Reginald Farrer.*

STACHYS CORSICA.

I WAS glad to see the interesting note on *Stachys corsica* by Mr. W. Irving, in his article on "Rare Corsican Plants," on p. 210. *S. corsica* is a little Alpine, which is now rarely seen, although it was fairly plentiful for a short time in some Alpine nurseries. Like many Corsican plants, it does not, however, prove very amenable to cultivation in the open, and a number of growers have lost their plants in winter, whilst only a few find it hardy over a series of years. In the open, it does best in a sandy soil, with stones and grit intermixed, and there it may stand mild winters, but the best position for it is in pans, as was stated by Mr. Irving. *S. Arnot, Sunnymead, Dumfries.*

The Week's Work.

THE FLOWER GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Hertfordshire.

The flower beds.—With the splendid weather of the past fortnight or more, the subjects in the flower beds are producing the finest display of the season. Many, such as Fuchsias, Lantanas, Swainsonias, and Pelargoniums are blooming in profusion. Give the plants copious supplies of water, and let this be done early in the day, so that the foliage may become dry before the evening. The plants in stone vases, on terraces, balustrades, &c., are also very beautiful just now. These must be well attended to in such matters as watering, staking, and removal of dead leaves and flowers in order to make them as attractive as possible.

Autumn tints in the shrubbery.—For several seasons past the autumnal tints of most trees and shrubs have not been very pronounced, but this year, judging by present appearances, the autumn foliage should be very beautiful. A complete list of trees and shrubs that give a display of leaf coloration in autumn would be a very lengthy one, but a few of the choicer may be enumerated. This includes varieties of Acer, Rhus, Spiræa, Amelanchier, Parrotia persica, Liquidambar, Berberis Thunbergii, Euonymus, Cotoneaster, Quercus, Crategus, Philodendron, Cornus, Vitis and Rubus.

Perennial Asters.—The varieties of Michaelmas Daisies are producing a grand display in the flower garden. They are especially valuable for producing cut blooms, and the flowers afford great variety of both colour and form. The plants are remarkably easily grown, and they may be planted at the back of the herbaceous border or in the front of shrubberies; indeed, their varying heights render them suitable for almost all positions. Their dwarf kinds of the *Amellus* section are particularly fine when massed.

General remarks.—The fine weather has favoured a good display of late Roses. Remove the faded flowers and keep the surface soil of the beds free from weeds. *Amaryllis Belladonna* is a beautiful autumn-flowering bulbous plant, but it does not succeed in all gardens. It requires a sunny site in a sheltered spot, the best position being at the foot of a wall. Autumn-flowering Chrysanthemums are blooming freely, and notes should be made of the most useful varieties. Keep the soil of the beds and borders

stirred with the Dutch hoe wherever possible, and tidy up the rockery by removing faded flowers, unnecessary shoots and weeds. Some choicer plants on the rockery will need to be protected from slugs and nothing is more suitable for the purpose than the guards made from perforated zinc. As the varieties of *Gladioli* mature, the bulbs should be lifted and dried. Cuttings of *Violet* inserted a few weeks since in cold frames will require plenty of fresh air. Syringe the young plants frequently to encourage a clean, free growth.

THE KITCHEN GARDEN.

By JOHN DUNN, Kitchen Garden Foreman, Royal Gardens, Windsor.

Cucumbers.—Cucumber plants which were put out early in August will now be nearly at the top of the trellis, and may now be allowed to carry a few fruits. At the same time, if the winter supply depends on this plantation, very little cropping must be attempted at present. It is better to maintain a small but regular supply through the winter than to punish the plants early in the season by growing more fruits than are required. If later plantations have been made there will be less fear of a break in the supply, but every effort should be made to encourage the development of these plants while there is sunshine, for this is indispensable in the cultivation of Cucumber plants to stand the winter. It is a comparatively easy matter to get Cucumbers through November and December, but not so easy to grow plants through the winter with sufficient vigour to maintain the supply through January and February. Plants for this purpose should be planted in September and grown in a night temperature of 65° without cropping until January, when they may be allowed to bear sufficient fruit for any ordinary establishment. When surface roots make their appearance, the bed should be lightly top-dressed with loam and leaf-soil in equal quantities. Keep the plants thinned and regularly tied to the trellis so that light may reach every part of them. Prevent high temperatures in cold weather, and keep the atmosphere moist by syringing the walls several times daily.

Celery.—The earthing-up of the plants should be pushed forward whenever the foliage is dry enough for the work to be done. Previous to this, the beds should be examined, and, if the plants are dry at the roots, a thorough watering should be given before the soil is applied, for no greater mistake can be made with this crop than to earth up plants whilst the soil is dry at the roots. Tie the leaf stalks together with some soft material, which may be removed after the soil has been placed around the plants carefully with the hand. For the final earthing the soil may be placed as high about the plants as possible consistent with keeping it from the hearts.

Tomatos.—Fruits on plants out-of-doors should be gathered as soon as they are sufficiently coloured and placed in a cool, dry position where they will keep in a good condition for a long time. Tomatos planted against south walls should have spare lights placed in front of them and within 6 inches of the fruits. The lights may be fastened to the wall by means of rope. Plants in pots intended to furnish a supply of Tomatos till Christmas should be given an abundance of light and plenty of fresh air. A little more freedom of growth should be allowed than is permitted in the case of summer plants, or the growth of the fruit may be checked to a large degree. Water must be given carefully during dull weather. Early October is a good time to sow Tomato seed for early spring cropping, and if suitable pits are available ripe Tomatos may be had from plants of this sowing by the end of March or early in April. When the young seedlings are large enough to handle, they should be potted singly into 3-inch pots, and placed as near to the glass as possible, maintaining a temperature of 55°. Sutton's Winter Beauty, Kershaw's Premier and Frogmore Selected are reliable varieties for this batch.

Asparagus.—Plants intended for forcing in November should have the stems cut away as soon as the foliage shows signs of ripening. Prick up the surface of the bed carefully with the point of a fork and give a copious watering, so that the roots may be in a plump condition when the time for lifting arrives. Asparagus is amongst the easiest of vegetables to force, pro-

vided pits, where beds of leaves can be placed to the depth of 4 feet, are available. The leaves should be collected as soon as possible and placed together in order to ferment.

Seakale.—A small batch of plants may have their lower leaves removed to allow light and air to reach the crowns, so that by the end of October they may be ready for placing in the forcing pit.

Spinach.—The latest sowing of Spinach should now be large enough for thinning. Although these late plants will not require so much room as those of an earlier sowing, they will winter better, and their leaves will be larger if a space of 2 or 3 inches is allowed between the plants. The early sowing will benefit if the leaves are picked, whether they are required for use or not, as this will cause the plants to make a more robust growth that will be better able to withstand the winter. Keep the soil stirred between the rows with a hoe, and give a good dusting of soot on the approach of rain.

Celeriac.—These plants will benefit by liberal supplies of liquid manure, afforded at least once a week, whilst the weather is dry, so that good-sized bulbs may be formed before frosts appear.

Mushroom.—Beds spawned at the end of August will now be furnishing a few button-like Mushrooms. The soil should be examined before many Mushrooms appear, and if it is found to be dry a gentle watering of rain water may be given. The temperature of the house at this stage may be maintained at 55°, and the walls and floor should be frequently syringed in order to maintain a moist atmosphere.

THE HARDY FRUIT GARDEN.

By A. R. SEARLE, Gardener to the Marquis of NORTHAMPTON, Castle Ashby, Northamptonshire.

Preparations for planting.—If many new fruit trees have to be planted, advantage should be taken of fine weather, to prepare the ground for this important operation, in order that it may be pushed forward as early as possible. The ground should be dug deeply; and, if there is not good natural drainage, artificial means of draining the land must be contrived. If the soil is poor, it may be improved by incorporating with it, as the digging proceeds, a compost consisting chiefly of good loam, with an addition of road scrapings, lime rubble and wood ashes; where stone fruits are being planted plenty of burnt soil and old mortar rubble should be worked in. In the case of Currants and Gooseberries or other small fruits, well decomposed animal manure may be dug in or used at planting time, but on no account should animal manures be used for large growing trees, such as Apples, Pears and Plums, as this induces them to make gross wood, lacking in fruiting qualities. The soil should be allowed to become settled before planting is commenced. Where it is possible, it is a good plan to have several cartloads of fairly dry and suitable compost placed under cover, and should the weather be wet when planting has to be done, a barrowful of this used to each tree will make the soil work much better, and will enable the planting to be taken in hand again several days sooner than otherwise it could be attempted. A selection of trees and varieties for planting should be made without delay, and the order placed early with a trustworthy nurseryman, so that the trees may be delivered immediately lifting operations are commenced. It is important to get the trees planted again before the roots suffer through dryness. Trees which have been sent a long distance by rail often arrive with their roots very dry, and it is a good plan to place them in a tank with the roots entirely under water for several hours; this will plump them up nicely before being heeled in or planted.

Figs.—These have not done well this year owing chiefly to the damp and sunless season. The trees have made a good deal of growth, which has not had a fair chance to mature properly. Therefore, every effort should be made to assist the trees in this matter as much as possible. Cut out weak and unnecessary shoots, and thus prevent overcrowding of the growths, in order that those retained for fruiting next year may be well exposed to full air and sunshine. The weather during the past month has been most helpful in the maturing of the wood of all fruit trees.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Surrey.

Deciduous Calanthes.—Plants of *C. Veitchii* and others of the *C. vestita* section, including such hybrids as *C. Bryan*, *C. William Murray*, *C. Victoria Regina*, *C. burfordensis*, *C. Bella*, *C. Harrisii*, and *C. Sedenii* are now showing their flower-spikes from the base of the new pseudo-bulbs. The plants should be afforded as much space as possible and full exposure to the sunlight. If the plants can be arranged so that the leaves are within a foot of the roof-glass, so much the better, but they will need frequent waterings. They will only require a very thin shading during the middle hours of the day, and if the sun is shining directly on them, and the outside air is warm, plenty of ventilation may be afforded. The later-flowering varieties of the *C. Regnieri* section are also making up their new bulbs, and still need abundance of water at the root. The amount of damping down between the pots should be lessened gradually, so that by the time half of the flowers are open it may be discontinued. The night temperature should be kept at about 65° till the flower-buds begin to unfold, when it may decline a few degrees further.

Catasetum, *Cycnches* and *Mormodes*.—These plants should now be placed in the sunniest position available in the warmest house. At Burford, they are suspended well up to the roof-glass on the south side of the house. Any of these species now showing their flower-spikes require generous treatment until the spikes are cut, when the plants should be placed in a cooler, drier and more freely-ventilated house; but it is important that they should be exposed to the sunshine. Until the leaves have fallen they must be kept fairly moist at the root, and when the leaves commence to turn yellow the supply of water may be gradually lessened until it is discontinued. After that stage they will need but very little water to keep the bulbs plump until they again commence to grow in the spring. If the bulbs do not mature properly, or the plants are insufficiently rooted, the bulbs are apt to shrivel a little during the resting season, and must, therefore, be watered. It is of frequent occurrence with these plants that, after producing strong inflorescence, they soon commence to show another spike; this, however, should be pinched out as soon as it appears.

Thunia.—Owing to the lack of sunshine, the leaves of the *Thunias*, although the plants have been in the resting house for a long time, are still perfectly green. While the foliage remains so, the plants must still be supplied with water at the root, and it is a good plan to syringe the leaves when the sun is shining on them. Keep the leaves free from red spider by laying the plants down and syringing them with rather warm, soft-soapy water.

Lælia pumila.—Immediately the dwarf-growing *Lælia pumila* and its varieties *præstans*, *alba*, *margaritacea*, *Colmanii*, *Gatton Park*, and *Low's Variety*, commence to send up their flowers, the plants should be removed from the cool house to a light position in the intermediate house, and liberal supplies of water at the root will be necessary until growth is completed, when the plants may be repotted if necessary. Small, shallow pans are very suitable for them, and only a very thin layer of *Osmunda* fibre and *Sphagnum*-moss is needed for the roots to grow in. Now that the nights have become colder, the *Chimæroid Masdevallias* should be removed to the intermediate house, where they should be suspended in the coolest and most airy part. They require plenty of water at the root at all times. These plants are always subjected to small yellow thrips and red spider, especially when in the warmer atmosphere, therefore they must be often taken down, and the leaves washed with a safe insecticide, taking care that none of the mixture gets to the roots or compost; also that after sponging the leaves should again be thoroughly washed with clean, soft water. Shade them always from the least direct sunshine.

Zygopetalum.—*Z. maxillare* is one of the few Orchids that thrive best when fastened to pieces of Tree Fern, upon which it is nearly always imported. The plant may be suspended in a moist, shady corner of the intermediate house, and be kept thoroughly moist at all times. Plants of the rare *Z. Ballii*, now starting to grow, may be repotted in a well-drained compost of

Osmunda fibre, *Polypodium* fibre and *Sphagnum*-moss in equal parts, cut up moderately fine. This plant thrives very well when arranged in a suitable position with the cool-growing *Cypripediums*, but the growths must be frequently examined for small yellow thrips, otherwise failure is sure to ensue. *Zygo-Colax Veitchii*, *Z.-C. Charlesworthii*, *Z.-C. Amesianus*, *Z.-C. leopardinus*, and *Z.-C. Wiganianus* require identical treatment. Other species and hybrids of the pseudo-bulbous section of *Zygopetalum* as *Z. Mackayi*, *Z. crinitum*, *Z. Clayi*, *Z. leucophilum*, *Z. Murrayanum*, *Z. Perrenoudii*, *Z. Sedenii*, *Z. Protheroeianum*, *Z. Burkei*, *Z. Jorisanum*, and *Z. Gottianum*, that are in full growth, will still require copious root waterings till growth is completed. A shady position in the intermediate house is the best place for them. *Z. rostratum* and *Z. Roeblingianum* thrive better when placed in a warmer temperature; both plants need plenty of water and shade. Owing to the creeping habit of the rhizomes, the growths quickly rise from the surface of the compost, and to afford the roots sufficient moisture it is advisable to spread a thickish layer of growing *Sphagnum*-moss over the surface of the soil, so that it may touch each young rhizome.

PLANTS UNDER GLASS.

By JOHN DONOGHUE, Gardener to JOSEPH PICKERSGILL, Esq., Bardon Hill, Westwood, Yorkshire.

Tree or Perpetual-flowering Carnation.—The plants should now be placed in their winter quarters. Avoid overcrowding on the stages, and take precautions to have both the plants and their surroundings scrupulously clean, an occasional washing of the glass both inside and outside being a great advantage. Beneficial results will follow if occasional waterings of clear soot water are afforded, as this will impart a deep, healthy colour to the foliage. Apply a top-dressing of some approved artificial fertiliser, and repeat the application fortnightly throughout the flowering season, taking care to avoid an overdose. The temperature of the house should be maintained at 55° at night, with an advance of 5° during the day. Ventilation must be afforded regularly, leaving the ventilators open a little during the night, and, in cold weather, on the opposite side to that from which the wind is blowing. An abundance of fresh air should be admitted during favourable weather, when the paths may be damped twice daily. Varieties of the *Souvenir de la Malmaison* type will be ready for repotting into 5 and 6-inch pots, according to the progress made since the last potting. The pots must be clean and dry, and have ample material for drainage. The potting compost should be of a slightly rougher nature than that used for the previous potting, adding mortar rubble or sandstone, and broken charcoal. Place the plants in a position as near to the glass as convenient, and allow as much ventilation as possible without causing cold winds to affect the foliage. Throughout the winter months the plants may be kept somewhat drier at the roots, but never allow them to suffer from excessive dryness. This type of *Carnation* is very subject to fungous diseases; but if the house is kept dry and well ventilated during the duller part of the year, diseases are not so troublesome. Specimen plants, if not already staked out, may be done without delay, as the growths are then more evenly disposed, and gain considerable advantage from the free circulation of air, and eventually become better ripened for standing the winter months. The temperature of the *Malmaison* house may be kept at about 45°, with an increase of 5° during the day.

Gesnera.—The ornamental-leaved *Gesneras* are exceedingly effective at this season of the year. They require a fair amount of warmth, and should be treated similar to the *Gloxinia*. Propagation is easily effected by division of the tuber, seeds, or cuttings: the cuttings may be inserted at any season of the year when a stove temperature is available. The *Gesnera* delights in a fibrous, peaty compost, and is a gross-feeding plant, therefore, when the pots are well filled with roots, afford a liberal supply of diluted liquid manure.

Gloxinia.—Corms which are thoroughly ripened may be stored away in a dry, cool place, where the temperature does not fall below 45°. Seedlings which were raised during late spring for autumn flowering are producing a good display of bloom, and, in order to prolong their

season of flowering, it is advisable to apply liquid manure and sometimes a top-dressing of bone meal.

General work.—With the shortening days, the atmospheric temperatures of the plant-houses should be reduced gradually. In the stove, the temperature may be reduced a few degrees each week until 65° is reached, this being regarded as the minimum, except in very severe weather. Most plants are benefited by slightly drier conditions and greater exposure to the sunshine after the first day of October. Examine the permanent borders in which climbing plants or other species are growing, and let any such borders be renovated which require this treatment. The growths of the climbing plants may be shortened, and undesirable wood removed, for the purpose of admitting a greater degree of light to the plants which are growing in the structure. If climbing plants for stoves are cultivated in large pots or tubs, they may be removed to cooler and drier conditions.

FRUITS UNDER GLASS.

By B. GOODACRE, Gardener to Sir ERNEST CASSEL, G.C.B., Moulton Paddocks, Newmarket.

Peaches.—Late crops in cool houses and wall cases are now ripening, and the recent sunny weather, with liberal ventilation, has contributed to the development of high colour and good flavour. Any trees which have been cleared of fruit may be syringed freely with clear water occasionally as a preventive of red spider.

Peach trees for forcing.—Any such work as lifting, replanting and root pruning should be taken in hand without delay in order that the roots may become settled before forcing begins. Lifting must be done with care, preserving as many roots as possible, cutting back any strong tap roots and any which may get bruised or broken during the operation. The trees having been taken up and heeled in, any necessary alterations to the border may be proceeded with. The Peach, in common with other stone fruits, requires a fair proportion of lime in the soil, and this is best applied in the form of old mortar rubble. The bulk of the soil should consist of fibrous loam with lime, wood-ashes, a little rough leaf-mould and a sprinkling of crushed bones. The border ought to be trampled or beaten thoroughly firm as the work proceeds. When replanting a tree, keep the roots well up to the surface, deep planting being a common fault, and often the cause of indifferent crops. Young trees which have made rank, unfruitful wood will benefit by being lifted and root pruned, adding a liberal quantity of mortar rubble to the soil round the roots when replanting, but no manures of any kind. Old-established trees, on the contrary, may be given a rich top-dressing. Prick up and clear away any inert soil on the surface of the border, then apply a good thickness of chopped loam, to which has been added some lime rubble and a proportion of some good fertiliser. The whole should be made thoroughly firm, and a soaking of tepid water applied directly the operation is finished. Any painting of the woodwork or trellis inside the house may now be done. In many cases, Peach trees are trained too near the glass, the trellis should never be nearer than 18 inches. Towards the end of this month, the work of pruning and cleaning the trees in the earliest house may be done in readiness for closing the house in November. After pruning, let the trees be cleansed thoroughly with a solution of quassia and soft soap, using a sponge on the young wood and a soft scrubbing brush on the older and rougher parts of the stem. The glass, woodwork and trellis should be scrubbed with soap and warm water, and syringed afterwards with clean water. The walls may be given a coat of limewash, working it thoroughly into all the crevices. Whiting or any mixture containing it should not be used, as the regular syringing causes it to drop off on to the trees, which soon present a dirty appearance. One or two clots of fresh lime placed in water to dissolve and put on whilst warm will adhere almost as well as paint and, besides destroying any insect pests with which it comes in contact, will act as a disinfectant and fungicide. Other houses from which the crop has been cleared should be ventilated to the fullest extent. Keep the foliage in a clean, healthy state until mature and ready to fall off. See that the roots do not suffer through lack of water or many of the flower-buds will drop later.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Special Notice to Correspondents.—The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

Letters for Publication, as well as specimens of plants for naming, should be addressed to the EDITORS, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, OCTOBER 10—
United Hort. Ben. & Prov. Soc. Com. meet.

TUESDAY, OCTOBER 11—
Roy. Hort. Soc. Coms. meet. (Lecture at 3 p.m. by Mr. B. Barker, on "Cider and Perry Fruits.") British Gard. Assoc. Ex. Council meet.

THURSDAY, OCTOBER 13—
Roy. Hort. Soc. Autumn Fruit Exh. (3 days). London Branch B.G.A. meet.

FRIDAY, OCTOBER 14—
Conference of Mutual Improvement Soc. at R.H.S. Hall.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich—50.6°.

ACTUAL TEMPERATURES:—
LONDON.—Wednesday, October 5 (6 P.M.): Max. 68°; Min. 50°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, October 6, (10 A.M.): Bar. 30.5; Temp. 59°; Weather—Sunshine.

PROVINCES.—Wednesday, October 5: Max 63° Oxford; Min. 54° Sligo.

SALES FOR THE ENSUING WEEK.

MONDAY, TUESDAY, WEDNESDAY, THURSDAY, AND FRIDAY—
Dutch Bulbs at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.

MONDAY AND TUESDAY—
Nursery stock in variety at Hickmandias Nursery, Knockholt, Kent, by order of Mr. A. Waterman, by Protheroe & Morris, at 12.

WEDNESDAY—
Azaleas, Bays, & Co., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 5.

WEDNESDAY, THURSDAY, AND FRIDAY—
Nursery Stock at The Nurseries, South Woodford, by order of Mr. John Fraser, by Protheroe & Morris, at 11.

FRIDAY—
Choice Established and Imported Orchids at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

Yorkshire Gardeners.

It appears from a discussion which has taken place recently in the correspondence columns of the *Yorkshire Post*, that many horticulturists in that county are greatly exercised as to the desirability of establishing a horticultural society for the north of England. As might be expected in a discussion of this public character a number of more or less irrelevant matters have been introduced by one and another of the correspondents. Among some of the suggested functions of the proposed society are, the formation of a first-class botanical garden in Yorkshire, the publication of a gardening paper, and the onerous task of discovering remedies for gardeners' grievances!

The outstanding purpose, however, as gathered from the letters, is to create an influential society to be managed on lines similar to those adopted in the case of the Royal Horticultural Society. The correspondents maintain that such an institution with its monthly meetings would provide for gardeners and gardening in the north of England privileges which the R.H.S. offers to all its members who have opportunities of attending the fortnightly shows at Westminster. The proposed society would be so founded as to be something more than a mere institution carried on for the purpose of providing facilities for exhibiting and for the dis-

tribution of prize money among successful competitors. It appears to be thought that this function would still be carried on by the numerous local horticultural societies, and that these latter would not find in the larger institution a rival, but a source of considerable help, inasmuch as it would be a means of co-ordinating work that is now carried out by each society in its individual capacity.

There may be excellent reasons for the aspirations of Yorkshire horticulturists. In the first place, the distance of that county from London is considerable, and it may not be possible for any but the most favoured gardeners to attend the larger shows of the R.H.S., to say nothing of the fortnightly meetings where the best work of that Society is done. In these circumstances, they feel that they do not get the full advantage of their membership. In the second place, they have not the opportunities possessed by gardeners in the neighbourhood of London, of showing, by means of frequent public exhibits, their skill in their calling, and thereby making a reputation for themselves. Although they may be just as capable as the leading gardeners in the south, the northern gardeners are, from their lack of opportunity, necessarily less known in the gardening world. The existence of a northern horticultural society of repute would help, in no small measure, to remedy this state of affairs, and it might have the effect of bringing to the front men who would otherwise achieve less prominence. In addition to these considerations, it might be urged that a society, conducted on the lines indicated, if managed wisely and well, would have a valuable educational force in whatever part of the country it is established.

The first matter to be settled by those interested in the question, is one of finance. Can a sufficient sum of money be found to enable the proposed society to properly carry out the aims and ideals of its promoters? In this connection it has to be remembered that greater strength and influence are more often gained by the amalgamation of existing organisations than by the creation of additional ones. In Edinburgh, for instance, there is at present a weakness of purpose which may be traced in a large measure to the division of effort and greater expenditure which the maintenance of separate organisations involves. The proposal to amalgamate the Royal Caledonian Horticultural Society and the Scottish Horticultural Association, which have been made recently by many who are interested in both Institutions, would, in our opinion, prove of immense service to Scottish horticulture, inasmuch as the amalgamated bodies would have greater influence than they possess as separate societies. We cannot say whether this point of view has received due consideration from the Yorkshire correspondents, who appear to assume that the existing societies in the county and district would continue their present activities after the establishment of a new society. In any case it would seem to be necessary that the management committees of the local societies should have representatives upon the committee of the larger association, for in no other way would it be possible to obtain the support and prestige essential for a society of the kind now under discussion. This is the more obvious when

the complaints of the Yorkshire gardeners are correctly understood. There are already numerous shows held in the county every year, in Leeds, York, and other places, but they have not the importance that belongs to those of the Royal Horticultural Society. This fact seems to be the principal cause of dissatisfaction, and, if this is the case, the promoters must consider how they are to establish an association that would be influential enough to satisfy their aspirations. If such a thing is attempted it will be a great gain if the friendly offices and practical help of the Royal Horticultural Society can be obtained by affiliation or other means.

There is one point that is open to question, namely, whether it is desirable that such societies as that which is now proposed should make a practice of awarding certificates to novelties exhibited at the shows. The certificates and awards of the Royal Horticultural Society have a value to gardeners over the whole kingdom. They are awarded by large committees, the members of which have opportunities of inspecting every new introduction and hybrid of outstanding merit, because the R.H.S. meetings attract everything of this nature. If the distance from London prevents gardeners in certain districts from attending these shows, it may be thought that for this very reason they have not sufficient means of comparing novelties to enable them to make awards that would be generally accepted with confidence. At the same time, Certificates for good cultivation could very properly be awarded, and these would probably be just as much appreciated, as Awards of Merit by most of the exhibitors.

Sweet Peas.

In the present issue we publish two communications which have just been issued by the National Sweet Pea Society dealing with the classification of Sweet Peas and "too-much-alike" varieties. These lists are prepared by a committee of twelve amateur and trade growers, who meet at the Society's trials and examine carefully many hundreds of varieties which are grown under numbers. The classification list contains the best of modern Sweet Peas, except a few novelties which are being distributed for the first time this autumn. The list is useful to all engaged in floriculture, to seedsmen as well as growers, to amateurs as well as professional cultivators.

It is not necessarily the best variety, in every case, which appears at the top of the various classes in the classification of Sweet Peas, but in every case it is the variety which has come truest to type and colour in the Society's trials. We are glad that the committee has given due weight to a matter of such importance as fixity of stock. It must be disappointing to many every season who purchase a beautiful variety because it is attractively shown, only to find that in cultivation not 10 per cent. of the produce resemble the flower exhibited. This matter will right itself in time, because business will go to those whose stocks are noted for purity.

The list contains nearly 30 colour classes, but, as few people want to grow more than a dozen or eighteen at the most, how are they to decide which should be discarded? In our opinion, the 12 classes that will give

the most satisfaction are white, cream, blush, pink, cream-pink, Picotee-edged (two), orange-pink, salmon, scarlet, bicolor, and lavender. This selection embraces all the most charming shades. Anyone wishing to extend the list to 18 should include cerise, crimson, maroon, mauve, orange-scarlet, and carmine. In placing an order with a seedsman, no one will err greatly if he selects either of the two first varieties in the colour sections we have named.

In respect to the list of "too-much-alike"

included a First-class Certificate and Silver Medal to Stirling Stent, and Awards of Merit to Masterpiece, Mr. Hugh Dickson, Arthur Green, and Cherry Ripe. It has now been decided that the Society shall issue to the holders of these varieties special labels, to be affixed to their packets when selling the seeds, so that for one season raisers will reap the reward of their labours. Steps are also to be taken for the registration of novelties, as is done by the Perpetual-flowering Carnation Society.



FIG. 109.—VIBURNUM HENRYI IN FRUIT.

(See also Supplementary Illustration.)

varieties, it must not be supposed that the varieties bracketed together in the second list are quite the same. They are not very far from it in some cases, it is true, but they are only declared to be too much alike in order to obtain variety at the exhibitions, therefore it is not permissible to show two of the bracketed varieties on the same competitive stand.

Earlier in the season it was announced that the National Sweet Pea Society had made awards to five new Sweet Peas. These awards

OUR SUPPLEMENTARY ILLUSTRATION, *Viburnum Henryi*, was awarded a First-Class Certificate at the meeting of the Royal Horticultural Society on September 27 last. The genus *Viburnum*, as represented in gardens, has been much enriched by Mr. WILSON's travels in Western and Central China on behalf of Messrs. JAS. VEITCH & SONS, not only in the number of new species introduced, but more particularly in the new aspects of the genus that have been revealed. *V. Henryi* is one of the most distinct of the new species. It is an evergreen shrub, growing 10 feet high, stiffly branched, and of

somewhat rigid habit. The leaves are oblong or oblong-lanceolate, 3 inches to 5 inches long by about one-third as much in width; of stiff leathery texture, very lustrous dark green above, paler beneath, and furnished with stellate hairs on the mid rib and stalk; the margin is shallowly toothed, except at the base. The flowers are produced about midsummer in pyramidal panicles 2 inches to 4 inches long; they are about 1-2 inch in diameter and dull white. The shrub owes its attractiveness as a garden plant to the abundant crop of bright, coral-red berries. Originally discovered by Dr. A. HENRY (after whom it is named) in the Patung district of Central China in 1887, it was introduced to this country by Mr. WILSON in 1901. Plants have been grown in the Coombe Wood Nursery since then without protection, and there is little doubt from the vigorous, healthy aspect of the plants there that it is a good grower and quite hardy in the average climate of the British Isles. The plant may be readily increased by means of cuttings. The supplementary illustration is reproduced from a photograph of the specimen which gained the Certificate.

ROYAL HORTICULTURAL SOCIETY.—The next meeting will be held in the Society's Hall, Vincent Square, Westminster, on Tuesday, October 11. At the 3 o'clock meeting in the Lecture Room an address on Cider and Perry Fruits will be given by Mr. B. T. P. BARKER, M.A. The great fruit exhibition will be held on October 13 and 14.

HORTICULTURAL CLUB.—The next house dinner of the club will take place on Tuesday, October 11, at 6 p.m., at the Hotel Windsor. Mr. GEORGE BUNYARD, V.M.H., will give an address on "Impressions of Carnac (Brittany), Its Dolmens, Alignments and Menhirs." The lecture will be illustrated with lantern slides.

FLOWERS IN SEASON.—Mr. CHARLES DOWSON, Nurseryman, Middlesbrough-on-Tees, sends blooms of a seedling border Carnation, named Her Majesty Queen Mary. The flowers are yellow ground with reddish markings, not over-large and with calices that do not burst. The variety is said to be extremely free in blooming.

MONUMENT TO MENDEL.—A monument to GREGOR JOHANN MENDEL, who died at Bruenn in 1884, was unveiled at Bruenn on the 2nd inst. in the presence of the authorities and a large number of representatives of foreign institutions, including Professor BATESON, Director of the "Innes" Horticultural Station. At a banquet which was subsequently given, speeches were delivered in which appreciative references were made to MENDEL's contributions to the study of the theory of heredity.

BRITISH AND CONTINENTAL SALADS.—Mr. W. F. GILES, of Messrs. SUTTON & SONS, Reading, delivered a lecture before the National Amateur Gardeners' Association at Winchester House, Old Broad Street, E.C., on Monday evening last, entitled, "British and Continental Salad Plants." The lecture described practically all the plants used as salads in England and on the Continent, and these were illustrated by lantern slides.

VEGETABLES FOR THE HOSPITAL.—At the recent exhibition of the National Vegetable Society, exhibitors were asked by Mr. ALEX. DEAN, on behalf of the Society, to contribute what vegetables they could spare as a gift to St. Thomas's Hospital. The hospital authorities fetched them away during the evening, and, later, sent a letter of thanks to the Society for the large quantity of first-class vegetables thus presented to them.

CHARITABLE BEQUESTS BY A MARKET GARDENER.—The late Mr. EDWARD MATYEAR, market gardener, of the Crabtree Farm, Fulham Palace Road, has left 21 acres of land, with a river frontage of 500 feet, valued at £4,000 an acre, to King Edward's Hospital Fund. He has also left £500 each to the West London Hospital and the Lygon Almshouses, Fulham Palace Road, and £250 to Nazareth House, Hammersmith. Mr. MATYEAR, who was in his 73rd year, died in the West London Hospital, and was buried at Fulham on the 26th ult. He and his late father had farmed the Crabtree land for over 100 years.

THE REGISTRATION OF FLORAL NOVELTIES.—The Perpetual-flowering Carnation Society is the first floricultural society in this country to introduce the system of registering the names of novelties. The system is recommended for several reasons, but mainly for securing for the raiser the use of the name he has selected for his novelty, thus preventing a confusion which might otherwise arise on account of other firms employing the same name for a novelty raised by themselves. In each case, we believe, the name of the novelty is registered with the society by the raisers sending the name and a description of the flower to the society's secretary. The following British-raised seedlings of perpetual-flowering Carnations have been registered this year. The descriptions are supplied to us by the Secretary. By C. F. WALTERS, Balcombe, Sussex, Albert E. Manders, orange with red stripes; Edith Waters, cerise. By H. BURNETT, Guernsey, Aurora, buff marked with pink; Bridesmaid, deep salmon-pink; Countess of March, salmon-pink; Daphne, deep pink; Fortuna, yellow, inclined to buff; Marmion, cherry-red with picotee, white margin; Mikado, deep heliotrope at its best; Mrs. W. B. Clode, reddish-salmon; Mrs. W. J. Hunter, cherry-red; Mrs. Tatton, white, overlaid with pink and margined white; Orpheus, bright yellow ground, marked with pink and white; R. F. Felton, pink; Snowball, white, inclined to blush in centre on opening; Snow Queen, white (pure); Vulcan, buff, heavily marked with scarlet. By YOUNG & Co., Cheltenham, Duchess of Devonshire, bright crimson, after President colour; Lady Henderson, bright flesh-pink. By A. SMITH, Enfield Highway, Empire Day, pale salmon-pink. By W. H. LANCASHIRE, Guernsey, Emperor, a white ground flower, striped with carmine. By C. ENGLEMAN, Saffron Walden, Harlequin, yellow ground, heavily striped with red. By STUART LOW & Co., Bush Hill Park, Lady Dainty, overlaid purple; Rival, coral-red. By J. WORMALD, Harrogate, Pride of Wharfedale, mauve ground, marked with pink; The Socialist, scarlet. By HAYWARD MATHIAS, Medstead, Etna, bright orange-scarlet; Mascot, salmon-pink; O.K., blood-red; Pink Pearl rose. The secretary, Mr. HAYWARD MATHIAS, Lucerne, Stubbington, Fareham, reminds us that the society's winter show will be held in the Royal Horticultural Hall, London, on December 13.

CRYPTOGAMIC SOCIETY OF SCOTLAND.—The annual conference of the Cryptogamic Society of Scotland was opened at Crieff on September 27. The members engaged in the search for fungi in several woods, and some interesting finds were made. On the evening of the 28th, the annual business meeting of the society was held, under the presidency of Dr. A. W. BORTHWICK, Edinburgh. The report of the year's work was satisfactory. The following office bearers were elected, together with several other gentlemen as members of the council:—President, Mr. R. B. JOHNSTONE, Cambridge Drive, Glasgow; Secretary, Rev. Dr. PAUL, Edinburgh; Treasurer, Mr. W. C. CRAWFORD, Edinburgh. It was agreed to hold next year's conference at Moffat, Dumfriesshire.

NEW PARK FOR NORTH LONDON.—According to the *Times*, the Middlesex County Council has decided to contribute a sum not exceeding £5,000 towards the £20,000 required for the purchase of 60 acres of the Grovelands Estate, Winchmore Hill, which is being acquired by the Southgate District Council for the purpose of a public park. The park, which is in the centre of a building estate of 360 acres, is a portion of the Great Deer Park, which formerly extended to Enfield Chase, and was a favourite hunting-ground of James II. and Henry VIII. It is stated that, owing to its peculiar shape, the park will be known as the "Leg of Mutton Park."

YORKSHIRE FUNGUS FORAY.—The annual fungus foray of the Mycological Section of the Yorkshire Naturalists' Union was held at Sandstead, near Whitby, from September 17 to 22. Fungi were very abundant in Mulgrave Woods, and, notwithstanding that the present was the fourth visit of the society, six species of agarics new to the British flora were collected, and also one species only previously recorded from Jersey. *Mycena flavipes*, a very beautiful agaric, with a pink cap and clear yellow stem, was met with in fair quantity. This fungus was first observed as a British species in Mulgrave Woods about 25 years ago, and it has not been observed elsewhere in this country. The species was founded on specimens collected in the Jura district in France. Many other rare and interesting British species were found, and, taken altogether, the meeting proved most instructive, from both a systematic and an ecological standpoint. The success was largely due to the facilities afforded by the Rev. the Marquis of NORMANBY. In the evenings, discourses on mycological subjects were given by Mr. WAGER, F.R.S., Mr. CLARKE, Mr. GIBBS, and Mr. GEO. MASSEE. Mr. CHEESEMAN exhibited a collection of myxogastres collected in the Rocky Mountains, and Mr. CLARKE exhibited a large series of coloured drawings of fungi. The extensive and beautiful Mulgrave Woods, with their deep ravines and winding streams, always furnish an abundant fungus flora, independent of the season, which, to a great extent, determines its presence or absence in less-favoured localities.

ABUTILON THOMSONII.—The Curator of the Botanic Garden, Cambridge, states that he would be exceedingly grateful if any reader would kindly send him a few flowers of *Abutilon Thomsonii*. The pollen is needed for plant-breeding experiments, and the anthers should be on the point of bursting, with some a little riper. It may be necessary to point out that this plant has leaves mottled with yellow and flowers strongly veined like those of *A. striatum*. Another plant is sometimes wrongly known as *A. Thomsonii*. Mr. LYNCH would also be grateful for a plant of *Gymnogramme trifoliata*.

PUBLICATIONS RECEIVED.—*A Simple Method of Bottling Fruit at Home*, by J. Stoney, with Recipes for Home-made Jams, by Mrs. Stoney. (Stafford: J. & C. Mort, Ltd.) Price 6d.—*British Rainfall, 1909*, by Hugh R. Mill. (London: Edward Stanford.) Price 10s.—*The British Fern Gazette*, September, 1910, edited by C. T. Druery. (Westmoreland: The British Pteridological Society.)—*A Handbook of Tropical Gardening and Planting*, by H. F. Macmillan. (Colombo: H. W. Cave & Co.) Price 10s. 6d.—*A Research of the Pines of Australia*, by R. T. Baker, and H. G. Smith. (Sydney: W. Applegate Gullick.)—*Rose Culture* (adapted to South African conditions), by Hugh Manson. (Pietermaritzburg: Times Printing and Publishing Co., Ltd.)—*The Journal of Agricultural Science*, by Prof. R. H. Biffen, A. D. Hall, and Prof. T. B. Wood. (Cambridge: University Press.) Price 5s.—*Agricultural Bacteriology*, by John Percival, M.A., (London: Duckworth & Co.) Price 7s. 6d.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

COE'S GOLDEN DROP PLUM.—Plums are scarce this season, and those who are fortunate enough to have a crop of Coe's Golden Drop, on wall trees, should endeavour to keep some of the fruits in good condition until the middle of November. The fruits, as they approach maturity, must be carefully protected from wasps and rain. It is well, in making the daily gatherings, to go over the trees carefully, nipping out the ripest fruits with a pair of scissors. This will gradually thin the crop, and those fruits intended for late supplies will last all the longer. Dr. Hogg, in his *Fruit Manual*, refers to this Plum, and quotes from Lindley's *Guide to the Orchard*, "That by hanging the fruit in a dry, airy place, or wrapping in soft paper and keeping it dry, it will last a considerable time, and he (Lindley) has eaten it, when kept in this way, 12 months after it has been gathered." I have not proved it so lasting as this, but have frequently kept it in good condition and exhibited it as late as November. R. P.

HORTICULTURE IN YORKSHIRE.—Arising out of some correspondence in regard to establishing a horticultural society in Yorkshire, which has recently appeared in the *Yorkshire Post*, a correspondent offered £5 if a meeting could be arranged in Leeds during October. On September 30, about 50 horticulturists held a meeting at the Grand Central Hotel, Leeds, in order to elect a committee to carry a scheme into effect for the initiation of a horticultural society which shall, if possible, be incorporated with the Royal Horticultural Society. The committee met on October 3, and Mr. Allsop, City Parks Superintendent and chairman of the committee, announced that the Lord Mayor of Leeds had promised his support to the scheme, and that he extended an invitation to those interested to hold a mass meeting of Yorkshire horticulturists in the Lord Mayor's room on Tuesday, October 25. Further particulars will be advertised in due course. John Donoghue.

WILD FLOWERS IN LONDON.—It is curious to note how waste ground, even in the heart of London, becomes tenanted by wild flowers, and how greatly the flora of one district differs from that of another. Take, as examples, the large vacant plot of ground in the Strand, where, at the present time, no fewer than 28 species and varieties of plants may be found, while at Millbank nearly an equal number may be detected on the disused piece of ground behind the Tate Gallery. Again, in Farringdon Street, a small patch of land that has only been vacant for a short period contains 28 species, exclusive of grasses. The curious dissimilarity of the plants found on each of these three stations is remarkable. Amongst other plants the Willow Herb (*Epilobium angustifolium*) is plentiful in the Strand, while it is entirely wanting at Millbank, and two species are present at Farringdon Street that are absent from the other stations. At the Strand site, the plants which occur in greatest quantity and attract most notice are the Willow Herbs (*Epilobium hirsutum* and *E. angustifolium*), followed by the Yarrow (*Achillea*), Wild Balsam, Poppy, Silverweed (*Potentilla*), Coltsfoot (*Tussilago*), Feverfew (*Pyrethrum*), Persicaria, Charlock, and numerous weeds such as the Dandelion, Groundsel, Plantain, Chickweed, Daisy, several species of grasses and the Common Rush. Amongst woody plants occur the Willow and Wild Plum, while even Ferns are represented by a tuft of the common Bracken. The latter plant also occurs at Farringdon Street; and the Annual Poa (*P. annua*) is common to all three stations. The great majority of these plants, including the Compositæ, have undoubtedly been distributed by the wind, so that their presence even in the centre of London can readily be explained; but flat and heavy-seeded plants, such as the Poppy, Plantain, Persicaria and Plum, hardly lend themselves to such a method of distribution. The Plum fruit was probably thrown into the Strand grounds by a passer-by, while the Bracken may have found its way from Covent Garden Market. Sparrows and cats disseminate seeds freely, and it is surprising what a collection of wild plants may be got from a vanload of the sweepings of a London street, a fact

that is unfortunately well known to the users of such in the public parks and gardens. Whilst writing of wild flowers in London, it may be interesting to state that within 15 minutes walk of Oxford Circus the Cowslip (*Primula veris*) may still be seen growing in a truly wild state. *A. D. Webster.*

CELSIA CRETICA AS A SUMMER BEDDING PLANT (see fig. 110).—*Celsia cretica* is generally employed as a cool greenhouse or conservatory plant, but it forms also a most useful and pleasing subject for summer bedding or for massing in herbaceous borders, and in the forefront of shrubberies. The effect depends upon the plants being thoroughly well cultivated, so that each specimen will be capable of producing from four to eight strong stems that will flower pro-

very hard, and, collecting the trimmings as fast as they fall, burn them at once. If these maggots, which seem able to secrete themselves in the dead portion of the leaves, where no doubt they will hibernate, get into the soil, they will produce an army of perfect insects to propagate other maggots next year. It is strange that whilst the Celery or Parsnip fly or maggot has been so little in evidence this season, such a work of destruction should be proceeding in Privet leafage. *A.*

SEEDLING POTATOS.—On p. 245 your correspondent *A. D.* relates the methods of raising Potatos in an English nursery. This work is also done in Scotland on a very large scale, and some fine varieties have come from this side of the Border. As a personal instance of how difficult

ROSE FRAU KARL DRUSCHKI AS A BEDDER.—It is a common complaint that this Rose grows too tall for bedding purposes. I have also heard a good deal of adverse criticism on its lack of perfume, and some on what is termed its "dead white." I have experienced some difficulty as to its growth; dwarf, budded plants have often made shoots 6 feet to 7 feet in length, notwithstanding the plants had been very lightly pruned, and growths 5 feet in length frequently develop from pegged-down plants. Three years ago I made a new Rose garden, and one bed was planted with about four dozen plants of Frau Karl Druschki. The preparation of the ground was delayed, and this necessitated heeling the plants in until the third week in February. When planting them in the bed the strong roots were somewhat severely pruned, the pruning of the shoots being left until the last week in March. The result was short, sturdy growths, and nearly every shoot produced an abundance of first-rate flowers. I have lifted the plants each February since with the same result, the growths never exceeding 20 inches, although they were hard pruned. It would be interesting to learn if any other Rose-grower has adopted this plan. *Wm. Partridge, Hovingham Hall Gardens, Yorkshire.*

CEANOTHUS GLOIRE DE VERSAILLES.—I agree with *Yorkshire Gardener's* praise of this beautiful flowering shrub (see p. 249), believing it to be deserving of a more extended cultivation. It is the finest variety of *Ceanothus*, and, having grown it for more than 12 years in various situations and in widely-separated localities, I may state I have never seen it permanently injured by frost, therefore, no one need be afraid to plant it doubting its hardiness. The plant is not at all fastidious as to soil, but develops much better flowers under a generous treatment. In favourable conditions, it will continue to bloom until late in the autumn. Pruning should be practised fairly severely in the spring, and, in cases where the plant is growing in a border and away from a wall, it is a good plan to thin out the young shoots early, retaining a reasonable number according to the size of the specimen. Fresh growths will develop strongly, and as these develop they should be tied loosely to a central stake, or rough winds may break off the slender shoots. A capital effect is gained by planting an isolated bed in a fairly-sheltered position, giving the plants plenty of room to develop. By planting thinly, on a groundwork of white *Violas* or similar plants, a charming combination is obtained. *J. G. W., Kent.*

THE EDINBURGH HORTICULTURAL SOCIETIES.—If public interest in horticultural affairs were to be gauged by the state of the Royal Caledonian Horticultural Society and the Scottish Horticultural Association, then it would appear that a love of gardening in Scotland is on the wane. Nearly every show results in a financial loss, and the time has surely come for the executives of those two concerns to take a broader view of the situation. It is an opportune time to consider this subject, for this winter may see some change in Edinburgh. Amalgamation is proposed; but while this may ease the situation and cause a sense of security for the time being, it will not, by any means, popularise the exhibitions held in that city. The fact is, in a centre like Edinburgh, the ordinary competitive flower show is a failure, and the people expect to see more than competitive exhibits. The lines upon which the Royal Horticultural Society hold their fortnightly meetings in Vincent Square may be commended as what is necessary in Edinburgh. The experiment of holding a show three times a year, and eliminating, to a great extent, the competitive element, but inviting nurserymen in touch with popular demands to contribute exhibits, and award medals according to their excellence, would be worth trying, and, probably, they would receive more support from the public. Those in the majority in gardening to-day are not competitors. They want to see the best the floral world can give them, and, what is more, they are prepared to spend money to see it. The Edinburgh societies seem to have overlooked the fact that gardening is now the hobby of the masses, it is a democratic pastime, while their shows appeal only to those who compete or take an interest in competition. The competitive classes of the shows, too, are



FIG. 110.—CELSIA CRETICA AS A SUMMER BEDDING PLANT AT SEZINCOT.

fusely. The seeds should be sown in autumn, and the seedlings pricked out into boxes or a cold frame, finally placing the plants in beds or borders in the spring, where they are required to flower. *J. H. Dives, Sezincot Gardens, Gloucestershire.*

MAGGOTS ON PRIVET.—Without discrimination as to variety or colour of leaf, a leaf-mining maggot is preying on the foliage of this shrub this season in the most destructive way; it is feared that, in many cases, the plants will be defoliated. If anyone will take the trouble to gather some of the affected leaves, split them open, and examine the affected parts he will find black excretions, and generally from one to eight white maggots. These vary in length from $\frac{1}{4}$ inch to $\frac{1}{2}$ inch. Spraying in such case would be of no use; the obvious course to take is to shear or prune all Privets, whether singly or as hedges,

it is to improve upon varieties in commerce, I may state that out of nearly 3,000 seedlings I raised from several well-considered crosses made in 1904, and grown on carefully since, only one was found of sufficient merit to warrant its being worked up for stock. It was submitted this season to the Royal Horticultural Society, and was not considered worthy of an award, but I question if Wisley is a desirable place to test a Potato. A variety which received an award there this season has been discarded for years in Scotland, and, on the contrary, one which has never received recognition from that quarter is now at the top in its class all over the kingdom. Although by no means new, at the trials of the National Vegetable Society this year it has, I notice, received three marks. Disease has occurred here in many instances amongst seedlings in the first year from seed. *G. M. T., Mid-Lothian.*

not popular. They only admit of gentlemen's gardeners' or wealthy amateurs' exhibits having any chance, and this phase of gardening is hopelessly in the minority in these days. The treatment by the management of nurserymen at Shrewsbury, and the schedule of that show may be recommended to our Edinburgh friends, and this, combined with a little more knowledge of public opinion, may help them to emulate their contemporaries in Shropshire. Let them remember that there are two classes of the community; it is hardly fair to cater for one, in the shape of prizes, and expect the other to pay the piper. Let them interest both sides, only let the interest be predominant for that class which now holds the purse, that is, the public. If the purely professional element could support the show it would be another matter. However, in Edinburgh, this is impossible, and, it being necessary to ask public support, it is desirable to see that the popular taste is catered for. *G.*

FEIJOA SELLOWIANA.—The difference in the colour of the flower, as seen by Mr. Bartlett (see p. 242) and the description in the *Dictionary of Gardening*, may be partially explained by an old pocket-book note of mine. It was taken the first time I saw this Feijoa in bloom, namely, in the spring of 1904, the specimen being trained under the glass at the end of the economic house at Kew. The description reads thus: "The flowers are about 2 inches across, and composed of four fleshy petals of a curious hooded shape. These petals are purplish inside, and almost white on the exterior, but owing to their shape the interior is nearly hidden by the incurving of the edges, thus exposing the paler-tinted exterior. A striking feature of the flower is the cluster of long, slender filaments arranged in a brush-like fashion in the centre, a feature common to many other Myrtaceae plants. In this Feijoa they are bright red with yellow anthers." From this note it will be seen that the purplish inside is practically hidden by the lighter tint of the outside of the flower. Mr. Bartlett is fortunate in being able to grow this species out-of-doors; in most districts the plant must be given indoor culture. *W.*

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

SEPTEMBER 26.—*Present:* Mr. E. A. Bowles, M.A., F.E.S. (in the Chair); Dr. J. A. Voelcker, M.A., Messrs. A. W. Sutton, V.M.H., A. W. Hill, M.A., J. Douglas, V.M.H., J. T. Bennett-Poë, M.A., A. Worsley, E. M. Holmes, R. Irwin Lynch, M.A., V.M.H., R. H. Pearson, W. Hales, J. Fraser, W. Cuthbertson, R. A. Rolfe, and F. J. Chittenden (hon. sec.).

Bulbs decaying.—A number of *Narcissus* bulbs teeming with bulb mites and in a decaying condition were received for examination. It seemed certain that the mites were the cause of the trouble, though doubt is sometimes cast upon this idea. On this point Mr. A. D. MICHAEL wrote: "I have investigated the question of the injury done by the bulb mite to the best of my ability, and for the purpose of tracing the life history have kept specimens frequently under observation in confinement throughout their whole development from egg to adult. I have found it best to feed them on sound, healthy bulbs, which they eat with avidity. . . . I have no doubt but that they attack healthy bulbs, and I look on the creatures as true destroyers." (See also *British Tyroglyphidae*, vol. ii., Ray Society, pp. 92-95.)

Catasetum sp.—Mr. G. RAE FRASER, of Letchmore Heath, sent a pistillate flower of a species of *Catasetum* from Bermuda, which Mr. ROLFE considered to be probably *C. macrocarpum*, but as the pistillate flowers of the different species of *Catasetum* are so similar to one another, there is a little doubt about the name, which can only be settled when the male flowers appear. The whole inflorescence has, by the kindness of Mr. FRASER, been deposited in the Kew Herbarium.

Fasciation in Euphorbia Cyparissias.—A well-marked example of fasciation in the stem of this *Euphorbia* was shown.

Museum preparations.—Dr. J. A. VOELCKER showed a section of a woody stem prepared in the same manner as those of zoological anatomical

specimens shown by him last year. The section was immersed in a fluid which rendered it practically transparent, and made its structure throughout evident to the eye, although the specimen was about $\frac{1}{2}$ inch thick. The mixture of oils and ethers, &c., which renders this mode of preparation possible, is the discovery of Prof. WERNER SPALTEHOLZ, of Leipzig University.

Oak galls.—Mr. J. FRASER showed a number of Oak galls from the common Oak, and commented upon the variety that may be found even upon a single leaf.

Variations in Rye Grass.—Mr. JOHN FRASER also showed some specimens of *Lolium multiflorum* (= *L. italicum*), which he had collected on a rubbish heap, to illustrate the wide variation in the form of the inflorescence of this species. One of them had the spikelets set very close together on the rachis, and was apparently the forma *cristatum* of C. T. Timm, a rare form analogous to the *Lolium perenne* var. *cristatum*, which is much more common. Another had a branch spike with two or three empty glumes at the base of each branch and scarcely-awned outer glumes, appearing to be a hybrid, probably between *Lolium multiflorum* and *Festuca pratensis*.

Variation in Acer.—From Mr. BEAMISH, of Glounthaune, Co. Cork, came a specimen of the Japanese Maple "*Likoniishke*," with branches showing very much the character of the stock upon which it had been grafted arising considerably above the place of grafting. It was thought probable that the variation might be due to the tendency of the variety to vary.

Frost injury.—The secretary produced a draft of the report on the damage done by frost during the winter 1908-9.

SOUTH AMERICAN HORTICULTURE.

THERE was a good attendance at the afternoon meeting of the Royal Horticultural Society, on September 27, to hear a lecture by Mr. A. W. Hill, M.A., on the relation of South America to horticulture. Mr. E. A. Bowles presided. Mr. Hill's remarks were mainly concerned with garden plants which are natives of South America. Dealing first with trees and shrubs, he said that *Araucaria imbricata* was discovered by Don Francisco Dendariarena, of the Spanish Navy, in 1780. It was introduced to this country by Archibald Menzies in 1796. Menzies sent some of the seeds to Sir Joseph Banks, and from these specimens were planted at Kew. It was a very scarce plant until the collector Lobb sent home a large consignment of seeds in 1844. Other South American Conifers are *A. brasiliensis*, *Libocedrus chilensis*, *L. tetragona*, *Fitzroya patagonica*, *Saxegothea conspicua*, *Prumnopitys elegans*, and some species of *Podocarpus*. Mr. Hill pointed out that Pine trees, so typical of the Northern hemisphere, are not met with south of Mexico. Of deciduous trees, species of *Fagus* (*Nothofagus*) include *F. obliqua*, *Chili*, *F. antarctica*, and *F. betuloides*, *Terra del Fuego*. Among hardy shrubs, we owe many of our most useful introductions to Chili. *Azara microphylla* is found in Valdivia, and was sent home by Pearce whilst collecting for Messrs. Veitch & Son, Exeter. *Berberis Darwinii* was first discovered by Charles Darwin, and was introduced by Messrs. Veitch through their collector Lobb in 1849. This species and *B. empetrifolia*, the latter a native of the Straits of Magellan, are the parents of *B. stenophylla*, an accidental cross discovered in the nursery of Messrs. Fisher, Son, & Holmes, Handsworth, Sheffield. The beautiful *Berberidopsis*, which is such a feature in Cornish gardens, forms a link between the Natural Orders *Berberidaceae* and *Lardizabalaceae*. The latter Order is of interest since the genus *Lardizabala* is met with in Chili, but *Akebia* occurs only in China. *Embothrium coccineum*, the Flame Bush, first flowered in Exeter in 1853, and is a native of the regions of the Straits of Magellan. *Drimys Winteri* is another plant which first flowered at Exeter. *Desfontainea spinosa* was sent home by the collector Lobb. *Escallonia Philippiana* was discovered by Pearce in 1873. This is one of the parents of the beautiful *E. Langleyensis* raised by Seden, at Messrs. Jas. Veitch & Son's Langley Nursery. *Eucryphia pinnatifolia* was also introduced by Messrs. Veitch: the flowers are interesting, and have proved a puzzle to botanists, the plant having been placed in

several Natural Orders, including *Saxifragaceae*, *Hypericaceae*, and *Rosaceae*. Plants of *Eucryphia* thrive best at Kew in peaty soils, planted among Heaths. *Pernettya mucronata* is a native of the regions of the Straits of Magellan. *Fabiana imbricata* is a curious Heath-like shrub belonging to the N.O. *Solanaceae*. It is a native of Chili, and was discovered in 1838. *Tricuspidaria dependens* is also a native of that country. Amongst climbing plants from South America may be instanced *Lardizabala biternata* and *Streptosolen Jamesonii*, with its conspicuous orange-red flowers. *Streptosolen* was discovered by Lobb in 1847, in Northern Peru, at an elevation of 6,000 feet. This plant was lost to cultivation for many years after its first introduction, but plants were re-introduced in 1882. The genera *Stigmaphyllon*, *Malpighia*, *Tacsonia*, *Tecoma*, and *Tibouchina* (formerly known as *Pleroma*) give us some of our most useful greenhouse climbers; *Cantua buxifolia*, the "flor del Inca," is also a showy plant. Some of the *Abutilons* have been brought from Chili, and to this region we also owe *Lapageria*, *Bomarea*, and *Alstroemeria*. *Lapageria rosea* was introduced by Mr. Richard Wheelwright in 1847, who sent plants to Kew, but the white variety was not sent home until 1860.

The *Begonias* of South America have given us the tuberous-rooted varieties now so popular. *B. boliviensis* was used by Seden in the production of the first hybrid tuberous-rooted *Begonias* in 1869. *B. Pearcei* has played a large part in the production of the garden varieties, and its influence can always be traced in the varieties with yellow flowers. *B. Veitchii*, *B. Davisii*, and *B. roseiflora* are also natives of South America, and have been used in the production of our cultivated forms. The first white forms of tuberous *Begonia* arose from selecting pale-coloured seedlings of *B. roseiflora*.

Of herbaceous plants two genera of special interest to gardeners, namely, *Calceolaria* and *Fuchsia*, are very common in South America. Over 200 species of *Calceolaria* are found in that country. Many of these were originally in cultivation, but the majority are now seldom met with in gardens. Mr. Hill mentioned specially *C. alba*, *C. integrifolia*, *C. fuchsifolia*, *C. rugosa*, *C. violacea*, and *C. virgata*. *Fuchsias* include *F. excorticata*, *F. procumbens*, *F. parvifolia*, *F. fulgens*, *F. arborescens*, *F. simplicicaulis*, *F. triphylla*, *F. gracilis*, *F. macrostemma*, and *F. spectabilis*. The first *Fuchsia* is said to have been brought to England by a sailor at the end of the 18th century, and purchased by Mr. Lee, Nurseryman, at Hammersmith, who saw it in a cottage window. It was pointed out that the genus *Fuchsia* ranges from Mexico, through South America, to New Zealand, and that representatives of the *Calceolaria*, *C. Sinclairi*, &c., allied to *C. violacea*, also occur in New Zealand. Other herbaceous plants are *Tropaeolum majus*, *T. minus*, *T. peregrinum*, *T. speciosum*, *T. tuberosum*, *T. polyphyllum*, and *T. azureum*.

Amongst annuals may be mentioned *Schizanthus*, *Salpiglossis*, *Petunia* and *Alonsoa*.

Several Alpine plants were enumerated as being natives of South America, including *Oxalis enneaphylla*, *O. adenophylla*, *Primula farinosa*, *Malvastrum campanulatum*, *Nierembergia*, *Nototriche*, and *Azorella Selago*. Other well-known garden plants from South America are *Gunnera manicata*, *G. magellanica*, closely allied to the New Zealand species *G. monoica*; *Gynerium* (*Pampas grass*), *Heliamphora*, *Victoria regia*, *Browallia*, *Gloxinia*, *Gesnera*, *Heliotropium*, *Tillandsia*, *Billbergia*, *Puya*, and *Ananas*.

L'UNION PROFESSIONNELLE INTERNATIONALE HORTICOLE.

SEPTEMBER 23.—A meeting of this new Union was held on this date at the headquarters of the *Chambre Syndicale des Horticulteurs Belges*, at Ghent. M. Arthur de Smet presided, and there were present Messrs. Turbat, René Barbier, S. Royer, Léon Chenault, Sauvage, Brault, H. Müller, Krelage, De Coene, Soupert, Wartel, Burvenich, Pynaert, Bonthuis and others. After the chairman had opened the proceedings, M. Turbat read letters from various delegates regretting their inability to attend. The rules drawn up at Haarlem were then considered, and when certain amendments had been made they were adopted. It was decided to hold the next meeting at Luxembourg at the end of July or beginning of

August, 1911. M. Soupert returned thanks for the honour done to Luxembourg in being selected for the next sitting. The election of the international board of officials resulted in the following appointments for one year:—President, M. Arthur de Smet; vice-president, M. Soupert; general secretary, M. Turbat; assistant secretary, M. Barbier; treasurer, M. Sauvage.

In the evening, M. Arthur de Smet presided at a banquet given to the visitors. At the upper table were Messrs. Müller, Krelage, Turbat, Ch. Pynaert, Soupert, E. Wartel, and Burvenich. Other guests were Messrs. Royer, Barbier, Kuyl, Romain de Smet, Bonthuis, Chenault, F. Spae, Delarue-Cardon, Closon, Bernard Spae, Beernaert, P. van Acker, V. Vermeersch, E. De Cock, Jules De Cock, Louis Van Houtte, Sauvage, De Croene and Louis Gentil.

The chairman, after proposing the loyal toasts, said that they thanked the company for having attended to determine the establishment of the society. The work, began at Eisenbach, had been confirmed at Ghent, and henceforth when great questions relating to horticulture were discussed it would be before a tribunal of competent authorities who would be able to make the wishes of international horticulture known to the state.

M. Soupert said that the Union wished that in future nothing should be done in horticultural matters without their sanction. He concluded by thanking the Ghent members for their cordial welcome.

M. F. Burvenich followed. M. Pynaert responded for the Press. M. Sauvage complimented the gathering on the work they had accomplished. In these days of telephones, telegraph, &c., frontiers have ceased to exist, and they would all rejoice in the grand idea of brotherly union they had instituted.

M. Krelage spoke in appreciative terms of the appointment of M. Arthur de Smet as their chairman.

NATIONAL SWEET PEA.

The following details are furnished us by the Secretary. The lists have been prepared by the Floral Committee, and the General Committee has adopted them.

CLASSIFICATION OF SWEET PEAS.

The following is an up-to-date selection of varieties in commerce.

BICOLOR.	MAUVE.
Arthur Unwin	Tennant Spencer
Mrs. Andrew Ireland	Helio-Paradise
Colleen	*Mrs. Walter Wright
BLUE.	ORANGE-PINK.
Flora Norton Spencer	Helen Lewis
Mrs. G. Charles	*Miss Willmott
*Lord Nelson	
BLUSH.	ORANGE-SCARLET.
Mrs. Harcastle Sykes	Dazzler
Princess Victoria	Edna Unwin
	St. George
CERISE.	PICOTEE EDGED.
Cherry Ripe	(Cream Ground.)
Chrissie Unwin	Mrs. C. W. Breamore
*Coccinea	Evelyn Hemus
CREAM, BUFF AND IVORY.	PICOTEE EDGED.
Clara Curtis	(White Ground.)
Paradise Ivory	Elsie Herbert
*James Grieve	Mrs. Townsend
CREAM-PINK.	PINK AND SALMON PINK.
Mrs. Hugh Dickson	Countess Spencer
Glady's Burt	Zarina
Constance Oliver	*Prima Donna
CRIMSON.	ROSE AND CARMINE.
King Edward Spencer	John Ingman
*King Edward VII.	Marie Corelli
	*Prince of Wales
FANCY.	SALMON SHADES.
*Sybil Eckford	Earl Spencer
	Nancy Perkins
LAVENDER.	*Henry Eckford
Masterpiece	SCARLET.
Asta Ohn	Doris Burt
Frank Dolby	George Stark
*Lady Grisell Hamilton	(1908 med. stock)
LILAC SHADES.	*Queen Alexandra
Mrs. R. H. Carrad	STRIPED AND FLAKED.
	(Purple and Blue.)
MAGENTA.	Substrate
Menie Christie	*Prince Olaf
MARBLED.	STRIPED AND FLAKED.
elen Pierce	(Red and Rose.)
MAROON.	America Spencer
Nubian	Aurora Spencer
Othello Spencer	*Jessie Cuthbertson
Tom Bolton	WHITE.
*Hannah Dale	Etta Dyke
	Nora Unwin
	*Dorothy Eckford

*An asterisk denotes a variety that is not waved.

TOO-MUCH-ALIKE VARIETIES.

The following varieties have been bracketed as too-much-alike. "Not more than one of the bracketed varieties may be shown on the same competitive stand at any exhibition of the National Sweet Pea Society." The names are placed in alphabetical order.

BLUE.	ORANGE-PINK.
Anglian Blue	Anglian Orange
Flora Norton Spencer	Edrom Beauty
Kathleen McGowan	Helen Grosvenor
Shawandase	Helen Lewis
Zephyr	Maggie Stark
BLUSH.	ORANGE-SCARLET.
Bobby K.	Dazzler
Countess of Northbrook	Edna Unwin
Florence Morse Spencer	Gordon Ankentell
Mrs. Harcastle Sykes	Ruby (Aldersey)
Princess Victoria	St. George
	Thos. Stevenson
Blush Spencer	PICOTEE EDGED.
Lady Althorp	(Cream Ground.)
Mrs. T. G. Baker	Evelyn Hemus
Paradise Reamed	Mrs. C. W. Breamore
Sankey Spencer	
CHOCOLATE FLAKED.	PICOTEE EDGED.
(President)	(White Ground.)
Senator Spencer	Dainty Spencer
W. R. Beaver	Distinction
	E. J. Deal
CREAM-PINK.	Elsie Herbert
A. B. Bantock	Picotee
Earl of Plymouth	Winifred Deal
Holdfast Belle	PINK.
Mrs. Henry Bell	Countess Spencer
Mrs. Hugh Dickson	Enchantress
Mrs. Koutzahn	Paradise
Queen (Nuttall's)	Pink Pearl
Romani Raum	RED FLAKE.
W. T. Hutchins	America Spencer
	Lazette Lunley
Constance Oliver	Mrs. Wilcox
Nell Gwynne	Paradise Red Flake
	Uncle Sam
CREAM-PINK (deep).	Yankee
Anglian Pink	ROSE AND CARMINE.
Doris Foster	Albert Gilbert
Minam Beaver	Lady Farnen
Mrs. R. Hallam	Marie Cordis
Sybil Lee	Marjorie Willis
CRIMSON.	
Dodwell F. Browne	E. J. Castle
G. C. Waud	George Herbert
King Alfonso	John Ingman
King Edward Spencer	Mrs. W. King
Paradise Crimson	Paradise Carmine
Rose Gilbert	Spencer Carmine
Sunproof Crimson	SALMON.
Sunproof King Alfonso	Earl Spencer
The King	Nancy Perkins
	Stirling Stent
IVORY.	SALMON FLAKE.
Paradise Beauty	Magnificent
Paradise Ivory	Mrs. W. J. Unwin
Queenie	SCARLET.
Sea Foam	Doris Burt
	George Stark
LAVENDER.	Scarlet Monarch
Asta Ohn	WHITE.
Frank Unwin	Etta Dyke
Masterpiece	Money-maker
Mrs. Chas. Foster	Nora Unwin
Mrs. E. Noake	Paradise White
MAGENTA.	Purity
Menie Christie	Snowflake
Mrs. Charles Marler	White Spencer
MAROON.	White Waved
Anna Lumley	YELLOW AND BUFF.
Black Knight Spencer	(Grandiflora.)
Douglas Unwin	Harold
Dusky Monarch	James Grieve
Maroon Paradise	Mrs. Collier
May Garland	Mrs. A. Malcolm
Nubian	Safrano
Othello Spencer	Yellow Hammer
Silas Cole	YELLOW AND BUFF.
Tom Bolton	(Waved.)
MAUVE.	Clara Curtis
Amethyst	Giant Cream Waved
Empress	Mrs. Miller
Helio-Paradise	Paradise Cream
Ida Townsend	Primrose Paradise
Mrs. Walter Wright	Primrose Spencer
	Primrose Waved
Queen of Norway	Princess Juliana
Tennant Spencer	Waved Cream (Malechus's)
The Marquis	
Wentoe Castle	

MANCHESTER AND NORTH OF ENGLAND ORCHID

SEPTEMBER 8.—Committee present: E. Ashworth (Chairman); and Messrs. R. Ashworth, Arthur Ashton, Bolton, Cowan, Crombleholme, Cypher, Holmes, Keeling, Lee, Parker, Smith, Shill, Sander, Thorp, Ward, and Weathers (hon. sec.).

Z. A. WARD, Esq., Northenden (gr. Mr. Weatherby), staged a very bright group of plants, consisting principally of bright Cattleya and Lælio-Cattleya hybrids. The various forms of the beautiful Cattleya × Iris were particularly noticeable, and ranged in colour from pale straw to the deepest bronze. (Silver Medal.)

J. McCARTNEY, Esq., Bolton (gr. Mr. Holmes), exhibited Cattleya × Minucia Hey House var. and Cypripedium × Donald McCartney, the

latter a hybrid between C. × Gomerianum × C. ciliolare. Both plants received Awards of Merit.

The LIVERPOOL ORCHID & NURSERY Co., Gateacre, were awarded a Bronze Medal for a small group, consisting of forms of Odontoglossum crispum, O. Pescatorei, and other popular species. Cattleya × Rosette (C. Schilleriana × C. Mendelii) was given an Award of Merit.

W. R. LEE, Esq., Heywood (gr. Mr. Woodhouse), staged an excellent group, among which were several new plants. Odontoglossum × illustrissimum, a good cross between O. × Lambeana × O. × ardentissimum var. The Countess; and Cypripedium × Rossetii var. Leeana—the latter quite the finest form yet seen in the north—received First-class Certificates. Cypripedium × Hitchensæ Plumpton var., Cattleya × Adula var. Wivelsfieldensis, C. × Venus var. Leeana, C. × Oriol, and C. × Crown Prince received Awards of Merit.

Mr. J. BIRCHENALL, Alderley Edge, exhibited Acineta chrysantha (Award of Merit), and Chondrorhyncha fimbriata. (Botanical Certificate.)

H. J. BROMILOW, Esq., Rainhill (gr. Mr. Morgan), was awarded a Silver Medal for a group of Cypripediums, mostly well-known forms.

Rev. J. CROMBLEHOLME, Clayton-le-Moors, exhibited several Cypripediums.

Col. RUTHERFORD, Blackburn (gr. Mr. Loft-house), was represented by a good group of mixed Orchids, all well grown.

Other exhibitors were Messrs. E. V. Low, W. SHACKLETON, KEELING & SON, and J. ROBSON, to whom the thanks of the Committee were accorded. P. W.

SEPTEMBER 22.—Committee present: Messrs. R. Ashworth (Chairman); Arthur, Bolton, Crombleholme, Cypher, Holmes, Lee, Parker, Stevens, Thorp, Ward, and Weathers (hon. sec.).

MESSRS. CYPHER & SONS, Cheltenham, were awarded a Silver Medal for a group which contained a number of Cattleya hybrids, some well-grown examples of Vanda cœrulea, Miltonia vexillaria, and some fine Pleiones.

Mr. J. ROBSON, Altrincham, exhibited a good variety of Cypripedium × Priam, a new hybrid Odontoglossum, which was not named, and Cypripedium × Ruffei.

W. R. LEE, Esq., Heywood (gr. Mr. Woodhouse), exhibited a very choice collection, containing several new plants. Miltonia × "W. R. Lee," a distinct new hybrid; Odontoglossum × "W. R. Lee," a hybrid between O. × amabile × ardentissimum; Cattleya × Phrygia (C. × Portia × C. Enid), C. × Priam (C. Harrisoniana × C. × callistoglossa), and Sophro-Cattleya-Lælia × Olive received Awards of Merit. Cattleya × amabile (C. speciosissima var. Stanley × C. fascinator var. albens) received a First-class Certificate.

E. ASHWORTH, Esq., Wilmslow (gr. Mr. Holbrook), was given a Cultural Certificate for a well-flowered example of Cattleya × Maronii.

W. THOMPSON, Esq., Stone (gr. Mr. Stevens), exhibited Lælia × De Gestiana var. Thompsonii, a beautiful albino hybrid from a cross between L. Jongheana × L. flava. This plant received a First-class Certificate.

MESSRS. STANLEY & Co., Southgate, exhibited a collection of Cattleya × iridescens. C. × i. var. splendens received an Award of Merit.

The Rev. J. CROMBLEHOLME, Clayton-le-Moors, exhibited Cypripedium × Ossulstonii var. seraphicum.

MESSRS. CHARLESWORTH & Co., Haywards Heath, exhibited a very richly-coloured Cattleya × Mrs. Pitt var. Charlesworthii, for which they received an Award of Merit.

J. J. HOLDEN, Esq., Southport (gr. Mr. Johnson), obtained an Award of Merit for a very pretty form of Odontoglossum × excellens called "Auburn House var."

G. S. BALL, Esq., Burton, Westmoreland (gr. Mr. Herdman), staged a group consisting principally of Cypripediums, to which a Silver Medal was awarded.

Votes of Thanks were given to Messrs. THE LIVERPOOL ORCHID AND NURSERY Co.; W. SHACKLETON, Bradford; J. McCARTNEY, Bolton; and J. BIRCHENALL, Alderley Edge, for various exhibits.

NATIONAL CHRYSANTHEMUM.

OCTOBER 5, 6.—The early exhibition of this Society was held on the foregoing dates in the Crystal Palace, Sydenham. The weather was glorious, and the show proved an average display. Last season's early exhibition was dropped, but this fact did not affect the number of entries this year, which were about the same as usual. Fourteen novelties were submitted to the Floral Committee for awards, and of these eight received the Society's First-class Certificate.

The nurserymen's exhibits contributed largely to the success of the show. The arrangements were admirable under the management of the Secretary, Mr. R. A. Witty.

GROUP CLASS.

The first class in the schedule called for a display of Chrysanthemums, including plants and cut blooms, relieved with suitable plants and foliage of an ornamental character, the space allotted to each exhibitor being 14 feet by 7 feet.

There were two exhibits, one from Lady TATE, Park Hill, Streatham Common (gr. Mr. W. Howe), and another from Mr. FRANK BRAZIER, Nurseryman, Caterham. The 1st and 2nd prizes were awarded in the order given. The premier display included many large Japanese varieties as pot plants, with good blooms, in a setting of Bamboos, with tall Codiaums as relief, and a border of Adiantum Ferns, Abutilons, dwarf Coleuses and Codiaums. Mr. BRAZIER employed mainly decorative varieties staged in bamboo epergnes, with large Japanese blooms in the foreground and a row of dwarf yellow and other border kinds, margined with small Nephrolepis Ferns.

CUT BLOOMS (OPEN CLASSES).

There were four exhibits in the class for 12 blooms of Japanese varieties, distinct, shown on boards. Two of the displays were very close in point of merit. The 1st prize was made in favour of E. G. MOCATTA, Esq., Woburn Place, Addlestone (gr. Mr. T. Stevenson). All his blooms were of remarkably good quality, the finest being Mrs. L. Thorn, sulphur-yellow; Mrs. C. H. Totty, red, with golden reverse; Lady Talbot, a narrow-floreted yellow variety; Master James, red; Mrs. A. T. Miller, white; and Mary Farnworth, apricot-buff. The 2nd prize was awarded to Miss LONGWORTH, Gay's House, Holyport (gr. Mr. T. J. Broom), who showed Amarantha, Master James, Henry Perkins, Sappho, and others in fine form; 3rd, E. WORMALD, Esq., Grass Farm House, Finchley (gr. Mr. J. Kirkwood). The other exhibitor was Mr. MARTIN SILSBURY, Shanklin.

There were only two exhibits in the class for six blooms of Japanese varieties, and neither was remarkable for high quality. The 1st prize was awarded to ALFRED F. BLADES, Esq., Rookfields, Reigate (gr. Mr. F. Cordell), and the 2nd to W. H. STONE, Esq., Laurie Park, Sydenham (gr. Mr. T. W. Stevens). The finest blooms were Mrs. L. Thorn and Mrs. Geo. Mileham in the premier collection.

Mr. J. SMELLIE, Pansy Gardens, Busby, near Glasgow, won the 1st prize in the class for early-flowering Pompon varieties, shown in vases. Each exhibit contained 12 bunches, including not fewer than eight varieties. Mr. G. BOWNESS, Riverside Nursery, Busby, won the 2nd prize, these being the only competitors. Mr. SMELLIE showed Canariensis, La Luxemburg, bronze; Alice Butcher, dark terra-cotta; White St. Clouts; Early Blush, a showy pink-coloured variety; Scarlet Gem; Piercy's Seedling, bronzy-yellow; Blushing Bride, pink; Bronze Blushing Bride; Mignon, yellow; St. Clouts, white and pink; and Fiberta, the best of the yellow varieties shown. Mr. BOWNESS had similar varieties.

Mr. BOWNESS was the only exhibitor in the class for 12 bunches of early-flowering Chrysanthemums, not disbudded, showing excellent examples, all from the open garden, and with remarkably clear colours. This type of Chrysanthemum is the most suitable for border decoration; Mr. BOWNESS's selection embraced such pleasing sorts as Elstob Yellow (splendid); Roi des Blancs, Nina Blick, reddish-bronze; Miss Balfour Melville, bronze; Normandie, pink; and Wells's Scarlet. This exhibitor won the 1st prize in the classes for a vase of a bronze-coloured single variety with Eric, and for a vase of mixed single varieties.

OPEN CLASSES: DIVISION II.

The best of three exhibits of six bunches of early-flowering Pompons, distinct, was shown by Mr. J. SMELLIE, who had a grand display of such fine varieties as Blushing Bride, pink; Fiberta, yellow; La Luxemburg, bronze; and Scarlet Gem. 2nd, Mr. J. EMBERTON, Grove Road Nursery, Walthamstow.

There were also three exhibits of early-flowering Japanese or decorative varieties, grown out-of-doors; this was a very pretty class.

The 1st prize was awarded to Mr. J. EMBERTON for fresh, bright blooms of Hector, pink; Goacher's Crimson; Roi des Blancs, Lillie, pink; Wells's Scarlet, and Harrie, a splendid bronzy-yellow variety. 2nd, Mr. F. BRAZIER, with Nina Blick, Polly, Normandie, Province, Lillie, and Roi des Blancs.

The best vase of a Japanese variety was Master James, shown by E. G. MOCATTA, Esq., the blooms being especially good. 2nd, White Queen, shown by Madame STUART, The Convent, Roehampton (gr. Mr. A. Smith). The 3rd prize exhibit was also of this variety.

Mr. BRAZIER excelled in the class for a vase of a variety of early-flowering single Chrysanthemums with Brazier's Beauty, blush pink. 2nd, Mr. BOWNESS, who, as already stated, excelled in the class for a vase of early-flowering single Chrysanthemums, arranged with other kinds of foliage, there being three other competitors. Mr. J. EMBERTON, Grove Road Nursery, Walthamstow, was awarded the 2nd prize.

AMATEURS' CLASSES.

Exhibits in this section were poor. Mr. C. Fox, Richmond Lodge, Tunbridge Wells, was the only exhibitor in the classes for six bunches of early-flowering Japanese varieties and six bunches of early-flowering Pompons.

There were two exhibits in the class for three vases of early-flowering varieties shown by Mr. Fox and Mr. J. CHAPMAN, Melrose, Laurie Park, Sydenham (gr. Mr. W. Webb), who were placed 1st and 2nd respectively.

Mrs. W. MASLIN showed the best epergne decorated with Chrysanthemums and ornamental foliage.

DECORATIVE CLASSES.

Tables decorated with Chrysanthemums were numerous. In Mr. J. Williams's class there were five competitors, the 1st prize being awarded to Mrs. A. ROBINSON, Park Hill, Carshalton, who employed bronze and yellow Chrysanthemums, with Ampelopsis, Rhus Cotinus, and sprays of Asparagus intermixed; 2nd, Mrs. W. MASLIN, Ongar Hill, Addlestone, Surrey.

Mrs. ROBINSON also excelled in the open class for table decorations, with a very choice arrangement; 2nd, W. H. STONE, Esq., Sydenham (gr. Mr. Stevens), who was placed 1st for three epergnes decorated with Chrysanthemums and sprays of other foliage.

Messrs. W. Wells & Co. offered prizes in a class for six vases, distinct, of Chrysanthemums grown from this firm's seeds. Miss NATHAN, Little Heath Wood, Potters Bar (gr. Mr. W. Newton), was the only exhibitor, being awarded the 3rd prize.

The best vase of autumn foliage and berries was displayed by Mrs. BREWSTER, and this lady also showed the best hand basket filled with Chrysanthemums.

Mr. A. H. COLE, 326, Camberwell New Road, London, was the only exhibitor of a table arranged with floral devices.

FIRST-CLASS CERTIFICATES.

Maud Williamson (Japanese).—A large bloom, of deep rose colour, with silver reverse. Shown by Messrs. J. STREDWICK & SON, St. Leonards.

Japan (Japanese).—A fine, large, yellow bloom of the best exhibition type.

Mikado 1910 (Japanese).—A bloom of rosy-crimson shade, with nankeen colour reverse. These two were shown by Mr. M. SILSBURY, Shanklin.

Debutanté (Decorative).—A white bloom, tinged with rose.

Miss Dorothy Ashley (Decorative).—A variety of deep pink colour, showing gold in the centre. These two from Messrs. LOWE & SHAWYER, nurserymen, Uxbridge.

Cranfordia (Decorative).—A fine, yellow variety, suitable for market purposes.

Betty Spare.—The blooms of this variety are a pleasing silvery-pink colour.

Miss Collier.—A good, white, market Chrysanthemum. These three were shown by Mr. W. ROOTS, Cranford.

NON-COMPETITIVE AWARDS.

Large Gold Medals were awarded to Mr. NORMAN DAVIS, Framfield, for Chrysanthemums, with Michaelmas Daisies and Solidago as a background. The large, yellow, Japanese Chrysanthemum Tom Edwards was prominent. Messrs. W. WELLS & Co., Merstham, for Chrysanthemums and hardy flowers; Messrs. H. J. JONES, LTD., Lewisham, for a very pretty display of Chrysanthemums and Michaelmas Daisies, including large vases of the yellow Japanese Chrysanthemum Mrs. L. Thorn; and Messrs. HOBBIES, LTD., Dereham, for Roses and Dahlias.

Gold Medal to Mr. F. BRAZIER, Caterham, for Chrysanthemums, Asters, Phloxes, and vines with coloured foliage.

Silver-gilt Medals to Messrs. J. CHEAL & SONS, Crawley, for Dahlias; Messrs. T. S. WARE, LTD., Feltham, for Dahlias and Pentstemons; and Messrs. DICKSON & ROBINSON, Manchester, for Chrysanthemums and Michaelmas Daisies.

Silver Medal to Messrs. H. CANNELL & SONS, Swanley, for Chrysanthemums.

Bronze Medal to Mr. T. WILLIAMS, Ealing, for table decorations.

DEBATING SOCIETIES.

CHARMINSTER GARDENERS'.—The usual monthly meeting was held at Ermington on Monday, September 26, when a paper was read by Mr. W. H. Stone, gardener to Captain R. Dymond, of Brooklands, Charminster, on "Show, Regal, and Decorative Pelargoniums." He dealt with the propagation of the several varieties, from seeds and cuttings, and also gave details of their general treatment, and a list of the best sorts.

READING GARDENERS'.—The opening meeting of the autumn session took place on Monday, September 26, at the Abbey Hall, Reading, the president, Mr. Alderman Parfitt, occupying the chair. Eight new members were elected. Mr. Hart Synnot, D.S.O., B.Sc., Director of Agriculture and Horticulture at the Reading University College, was present, and expressed the pleasure it would give the college authorities to assist the association in any way that lay in their power. The announcement was received with applause. It was decided that a non-competitive exhibition, on the same lines as last year, be held during the latter part of November. The lecturer for the evening was Mr. H. C. Loader, The Gardens, Eridge Park, Reading, his subject being "Spring Bedding"—the arrangement of plants and bulbs for harmonious effect. Mr. Loader stated that in many gardens spring bedding seemed almost neglected. He then proceeded to deal with some causes of failure, warning his audience to avoid certain combinations which, though having a good appearance on paper, he had proved by experience to produce discord rather than harmony.

LOUGHBOROUGH GARDENERS'.—The annual meeting of this association was held at the Town Hall, Loughborough, on September 28: Mr. J. T. Smith presided. The annual report stated that the membership was equal to last year's, and the list of vice-presidents was larger. The attendance at the meetings, though rather better than last year, was not so good as could be wished. In the essay competition on "Practical Gardening," the first prize was awarded to Mr. J. Tyrrell, of the Gardens, Cardiff Castle, for his paper on the "Wild Garden." Mr. Burder was re-elected president, and the members of the committee were re-elected, with the addition of Mr. J. H. Woolley, of Kegworth. Mr. Smith was appointed chairman. The secretary and treasurer were re-elected. The annual dinner was afterwards held at the Bull's Head Hotel.

BRISTOL AND DISTRICT GARDENERS'.—A meeting was held on September 29, at St. John's Parish Rooms, Mr. Hayball in the chair. Mr. Gostling gave a paper on "Orchids." In the discussion which followed, the lecturer explained cultural details. Three new members were elected. Mr. Wall, of Melrose Nursery, Bath, exhibited several vases of winter-flowering Carnations, including Princess and Salmon Queen, two new varieties.

REDHILL AND REIGATE GARDENERS'.—The first meeting of the winter session of this association was held in the Penrhyn Hall on Tuesday, September 27. The chair was occupied by Mr. T. W. Herbert. Eight new members were enrolled. The first meeting of the season is always "Hospital Night," when flowers, fruits, and vegetables are exhibited, these being afterwards sent to the local hospital. During the evening Mr. G. Duncan, Merstham House Gardens, gave an address on "Vegetable Culture."

PLYMOUTH AND DISTRICT GARDENERS'.—The first monthly meeting for the session 1910-11 was held on Saturday, October 1, at the Nutley Grammar School, Plymouth. Mr. T. R. E. Oliver presided. In addition to a lecture by Mr. J. Wadlow, of South Wembury Gardens, on "Vegetables for Exhibition," there was a members' competition. The lecturer gave practical hints on the planting and cultivation of the Onion, Potato, Broccoli, Cauliflower, Leek, and other vegetables. At the conclusion of the lecture the chairman presented the honorary secretary (Mr. W. S. E. Cholwill) with a copy of Veitch's *Manual of Cultivation* as an acknowledgement of his services to the association.

BRITISH GARDENERS' ASSOCIATION (LONDON BRANCH).—A meeting of this branch will be held at Carr's Restaurant, Strand, on Thursday, October 13, at 8 p.m., when an address will be given by Mr. E. Feltham, on "The Policy of the B.G.A. and its Future Work."

WATFORD GARDENERS'.—This society held its first exhibition on Friday, September 30. The president, Mr. K. Comyns, offered a challenge cup for competition amongst the allotment-holders or cottagers. The competition in the open classes was most keen, and in the artisan and cottagers' classes some excellent produce was shown. The silver medal, offered by Mr. S. J. Ellis for the best exhibit in the show, was won by Mr. John Kerr (gr. Mr. Avery), with a collection of vegetables. The challenge cup for the allotments was won by Mr. Percival, who also took three first prizes, two seconds, and one third. Other winners included Mr. A. E. Dawes, who gained six first prizes and one second prize; Mr. Hayles, Mr. Andrews, Mr. Hayes, Mr. Ford, Mr. Madgwick, and Mr. Bedford. One of the most notable honorary exhibits was that shown by the president (gr. Mr. W. Waterton.) It consisted of a group of vegetables, measuring about 10 feet by 7 feet. Sir Charles Haddon, of Berkhamsted, showed a collection of Orchids, and floral exhibits were displayed by the president, Messrs. Gleeson, Messrs. Scrivener, and Mr. H. Newman.

THE WEATHER.

THE FOLLOWING SUMMARY RECORD of the weather throughout the British Islands, for the week ending October 1, is furnished from the Meteorological Office:—

GENERAL OBSERVATIONS.

The temperature was above the average, the excess being more than 4° in the north-eastern, eastern, and central parts of England, and nearly 4° in England N.W. The highest of the maxima occurred generally either on Wednesday or Saturday. In England E., and also at Westminster and Greenwich, the thermometer rose to 75°, and in several other English localities to 74°, but in Ireland and the north and west of Scotland there was no reading as high as 70°. The lowest of the minima were recorded on rather irregular dates, and ranged from 34° in Ireland N. and 35° in England N.E., and Ireland S. to 39° in Scotland E. and W., and to 48° in the English Channel. The lowest grass readings reported were 27° at Cochle Park (Morpeh), 28° at Llangunllyn Wells, 29° at West Linton, Sheffield, and Markree, and 31° at Crathes, Dumfries, and Newton Rigg.

The rainfall was less than the average, except in Ireland S., the deficit being large in most districts. At Yarmouth, Felixstowe, and Tunbridge Wells, the week was rainless, and at several other stations in the eastern half of Great Britain the fall was less than 0.10 inch.

The bright sunshine exceeded the normal in most parts of England, and was less in England S.W. and the English Channel, as well as in Ireland and Scotland. The percentages of the possible duration ranged from 43 in England N.E., and E., 42 in the English Channel, and 41 in England S.E., to 22 in Scotland N. and E. and Ireland N., and to 20 in Scotland W.

THE WEATHER IN WEST HERTS.

Week ending October 5.

The longest period of unseasonably warm weather for four months.—Throughout the last 12 days the temperature has been, in each case with one exception, above the average both during the daytime and at night—making this the longest spell of unseasonably warm weather since the middle of May. On three days during the same period the temperature in the warmest part of the day rose to or above 70°. The ground is now 2° warmer at 2 feet deep, and 4° warmer at 1 foot deep, than is seasonable. Rain fell on three days, but to the total depth of only a quarter of an inch, nearly all of which was deposited on the evening of the 1st day of the month. This fall was not sufficient to affect even the bare-soil gauge, through which there has been no measurable percolation for nearly three weeks. The sun shone on an average for four hours a day, or for nearly half an hour a day longer than is usual at this time of the year. The wind was high on one day, but during the rest of the week light airs and calms alone prevailed. The mean amount of moisture in the air at 3 p.m. fell short of a seasonable quantity for that hour by 8 per cent.

SEPTEMBER.

Exceptionally dry, calm and sunless, and very cold.—This was a very cold September, in fact, for a period of three weeks there was not a single warm day, and but few warm nights. Taking the month as a whole the days were as a rule cold, while the nights on the other hand were but slightly below the average in temperature. On the warmest day the temperature in the thermometer screen rose to 73°, which is a low extreme maximum for the month, and on the coldest night the exposed thermometer fell 4° below the freezing point, or only about 1° lower than the average extreme minimum for September. Rain fell on only eight days, a very small number for the month, and to the total depth of but half an inch, which is only a quarter of the average total fall for September. In fact, this was the driest month in Berkhamsted since February, 1909, or for 19 months, and also the driest September since 1865, or for 45 years. The sun shone on an average for 3½ hours a day, which is an hour a day short of the September average, and with the exception of the same month last year, the most sunless September for 14 years. With one exception this was the calmest September of which I have here any record. In the windiest hour the mean velocity only reached eight miles—a very low maximum for any month in the year. The mean amount of moisture in the air at 3 o'clock in the afternoon exceeded a seasonable quantity for that hour by as much as 7 per cent.

THE SUMMER RAINFALL.

During the summer half of the present drainage year, ending September, 12½ inches of rain fell, which is an inch in defect of the average rainfall for the same six months in the last 54 years. During the period in question, April, July, and September were dry months; while May, June, and August had, on the other hand, a rainfall more or less in excess of the average. E. M., Berkhamsted, October 5, 1910.

Obituary.

MRS. YOUNG.—Mr. John Young, head gardener at the Zoological Gardens, Regent's Park, has suffered a bereavement in the death of his wife, who passed away after a long and painful illness on September 19 in the 60th year of her age. The remains were interred at Hendon Cemetery on the 23rd ult. in the presence of her husband, family and numerous friends.

ANDREW HOGGAN.—The death of this well-known amateur gardener occurred at his home at Strathyre, Busby, near Glasgow, on September 22. Mr. Hoggan, who was 54 years of age, passed away in his sleep from heart failure. His favourite flowers were Chrysanthemums and Sweet Peas. He was a vice-president of the National Sweet Pea Society. He always exhibited successfully at the exhibitions of the National Chrysanthemum Society, and also at the Glasgow and Edinburgh shows. The funeral took place at Glasgow on the 26th ult.

ENQUIRIES AND REPLIES.

AGED WALNUT TREES (see p. 256).—The following is the best method of improving Horse Chestnut and other trees, especially when these are not very old:—Carefully remove from around the roots with a fork or pick, all loose earth, commencing at 10 yards from the trunk, and working inwards to about 3 yards or 4 yards of the stem. A depth of about 3 inches or 4 inches below the roots will be found ample to excavate. Replace the soil removed by equal parts of loam, leafsoil, and a small quantity of well-rotted manure. This compost should be carefully rammed beneath and around the roots, and brought up to the original level of the ground—the whole being made quite firm. Dead and dying branches should be cut back to the living wood, and all decayed matter removed from hollow trunks, the openings being covered by a piece of zinc to keep out the wet. Pollarding is sometimes recommended, but the trees should be examined by an expert before this is attempted. A. D. Webster.

TO DESTROY BATS.—Can any reader inform me how to destroy bats, either by catching or poisoning. J. S. H.

ANTS.—I am troubled greatly with ants. I have often seen them in glasshouses, especially in stoves, but never in such large numbers. They seem to be everywhere, in the potting shed, boiler house, and even in the kitchen and cellars of the dwelling house. I have tried several preparations sold as ant destroyers, but find them quite useless. Perhaps some reader will kindly help me. H. S.

ANSWERS TO CORRESPONDENTS.

APPLE: A. Stapleton, J. G. & Co., and E. C. The grub in the centre of the Apple shoot is the caterpillar of the Wood Leopard Moth



FIG. III.—WOOD LEOPARD MOTH: ZEUZERA AESCULI.

(Zeuzera aesculi) (see fig. 111). It does but little harm—never becoming epidemic. Cut off and burn the attacked part. Board of Agriculture and Fisheries Leaflet No. 60 gives the life-history of this pest, and the leaflet may be

obtained, post free, from the Secretary, Board of Agriculture, 4, Whitehall Place, London.

BEGONIA GLOIRE DE LORRAINE: R. J. F. There is no fungus disease on the Begonia leaves sent. The trouble is due to excessive moisture in the atmosphere and at the roots.

BEGONIAS DYING: Geo. West. The Begonia plants sent are attacked by one of the rarer species of eelworm. The roots are badly affected, and it is doubtful if anything can be done now to save the plants; but you might try watering the soil with lime water (about 1 lb. of slake quicklime to 25 gallons of water). Allow the mixture to stand, stirring once or twice, then pour off, and use the clear liquid, which is lime water. Start next season with sterilised soil obtained by steaming or baking it.

BIG-BUD IN CURRANTS: Gillingham. Your communication regarding the presence of maggot in association with "big-bud" in the Black Currant is of much interest. We would point out, however, that the maggots in question are not the cause of the disease; they prey upon the mites (Eriophyes ribis), which are swarming in all of the buds sent to us for examination. The presence of this small, dipterous larva in mite-infested buds has already been recorded, but we do not remember to have seen them in so large a percentage of buds on any previous occasion.

CELERY DISEASED: W. K. The Celery leaves are infected with a fungus called Cercospora apii. Burn diseased leaves, and do not plant Celery on the same ground again for some years. The fungus in the Oak trunk is Polyporus dryadens. The trouble has gone too far to effect a cure.

CYCLAMEN: F. G. B. See reply to T. D. M. under "Muscari Bulbs." The maggots appear later, and are not the primary cause of the trouble.

DWARF BEANS WITH TOUGH PODS: Mrs. C. A. M. The trouble is largely due to unsuitable soil and drought. The lack of moisture at the roots has caused the plants to hasten to the stage of seed production. We do not undertake to reply by post.

ERYA LATIFOLIA: Plantsman. The variegated leaves are attacked by a fungus disease. This is probably due to keeping the plant in a moister atmosphere than is good for it. It would be as well to transfer the plant to a well-ventilated greenhouse which has a hot-water pipe running through it. After this date syringing will be better discontinued.

FELLOWSHIP OF THE ROYAL HORTICULTURAL SOCIETY: J. L. "A line addressed to the Secretary, Royal Horticultural Society, Vincent Square, Westminster, containing the name and address of the proposed new Fellow will suffice." Vide R.H.S. Book of Arrangements.

GLOXINIA: John T. The "rust" on the Gloxinia leaves is not caused by a fungus, but probably by some insect. A Nicotine wash, made of 1½ ounces of pure Nicotine (90 to 98 per cent.), 2 ounces of soft soap, and 10 gallons of water, will rid the plants of aphids, thrips, and similar pests.

INSECT FOR NAMING: J. B. One of the common "burying beetles" Necrophorus vespillo. This and all the allied species are carrion feeders.

IRIS DISEASED: A. B. C. The Iris is suffering from a bacterial disease. Cut away all affected portions of the rhizome, and mix superphosphate of lime with the soil before replanting.

IVY LEAVES: F. A. Edwards. The appearance of the Ivy leaves suggests damage by some minute insect, possibly a Phytomyza, though none was visible. The only practicable remedy is to cut the Ivy well back. The Celery is attacked by the fungus Septoria Petroselinii var. Apii. Nothing can be done now except to burn the affected parts. Another season the disease can be prevented by spraying the foliage with Bordeaux Mixture (4 lbs. quicklime, 4 lbs. copper sulphate, 50 gallons water), the mixture to be applied in a fine spray before the disease appears.

LIME DRESSING FOR LAND: John Taylor. Thirty to forty bushels of quicklime to the acre is sufficient to arrest "club" in Winter Greens.

MELON LEAVES: Wm. Ford. The Melon leaves are too far decayed for the cause of the injury to be ascertained. Send some leaves which show the first signs of the disease.

MALFORMATIONS OF PEARS: *J. C. W. & Son, Ltd.* The specimens exhibit a not uncommon malformation, in which a flower-bearing branch has swelled to form a conical Pear-like mass which bears on its surface rows of fleshy rudimentary leaves. The leaves are represented for the most part merely by their bases which are brown and succulent, and contribute to the flesh of the malformed Pear. In some of the leaves, however, a leaf-stalk and a small blade are also present. All that can be said as to the cause of the malformation is that it is a result of some malady of unknown nature



FIG. 112.—MALFORMED PEARS.

undergone by the tree or the branch at the time of the development of the flower. As a result of the malady, the rudiments of embryonic tissue which should have produced the several parts of the flower have given rise instead to leaf-scales. When it is remembered that the edible part of a Pear consists of the hypertrophied flower-stalk, it can be understood that if there were a fusion between the tissue destined to form the latter and that whose business it was to form the several parts of the flower—sepals, petals, stamens and carpels—then the structures produced from these mixed rudiments might be expected to partake of the nature of flower-stalk and leaf.

MICHAELMAS DAISIES: *R. F.* Three excellent varieties of the *Aster ericoides* type which generally flower in September are as follow:—*Decorator*, white; *Ophir*, grey-blue, and *Osprey*, blue. Valuable varieties for flowering in September are *Star Shower*, white; *Charmer* or *Grey Dawn*, grey-blue, and *Simplicity* or *King Edward*, blue.

MUSCARI BULBS: *T. D. M.* The bulbs are destroyed by the bulb mite, which is present in the soil. Mix gas-lime with the latter.

Names of Flowers, Fruits, and Plants.—We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruits. Such work entails considerable outlay, both of time and money, and cannot be allowed to disorganise the preparations for the weekly issue, or to encroach upon time required for the conduct of the paper. Correspondents should never send more than six plants or fruits at one time; they should be very careful to pack and label them properly, to give every information as to the county the fruits are grown in, and to send ripe, or nearly ripe, specimens which show the character of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations. Correspondents not answered in one issue are requested to be so good as to consult the following numbers.

FRUITS: *A. S.* 1, *Scarlet Pearmain*; 2, *Margil*; 3, not recognised, probably a very

old local variety; 4, *Dumelow's Seedling* (syn. *Wellington*).—*J. Harris.* 1, *Ross Nonpareil*; 2, not recognised; 3, *Fearn's Pippin*; 4, *Sturmer Pippin*.—*Henry Ward.* *Williams' Bon Chrétien*.—*P. E.* 1, *Jefferson*; 2, decayed; 3, *Coe's Golden Drop*.—*L. Broughton.* 1, Not recognised; 2, *Benoni*.—*W. G. W.* 1, *Alfriston*; 2, *Cockle Pippin*; 3, *Bramley's Seedling*; 4, *Bachelor's Glory*; 5, deformed fruit, please send a better specimen; 6, not recognised; 7, *Tower of Glamis*; 8, *Reinette du Canada*; 9, *Waltham Abbey Seedling*; 10, *London Pippin*; 11, not recognised.—*J. Halsey.* The green Apple is *Winter Nonesuch*; please forward a sound fruit of the other variety, the one received was partly decayed; 1, *Plum Prince Englebert*; 2, not recognised.—*A. H. G., Theale.* 1, *Stirling Castle*; 2, *Worcester Pearmain*; 3, *Cox's Pomona*; 4, *Peasgood's Nonesuch*; 5, *Cullen*; the Pear was decayed.—*A. T.* 1, *Hanwell Souring*; 2, *Norfolk Beefing*; 3, *French Crab*; 4, *Hoary Morning*; 5, *Beauty of Kent*; 6, *Braddick's Nonpareil*; 7, *Cox's Orange Pippin*; 8, *Wyken* (syn. *Warwickshire Pippin*).—*J. D. M.* The Figs arrived in a state of pulp.—*Miss Lomax.* We cannot undertake to return fruit sent to us for naming. The green fruit is *Josephine de Malines*, the other is not developed properly.—*C. Ware.* 1, *Worcester Pearmain*; 2, *Warner's King*; 3, *Lady Henniker*; 4, *Gascoyne's Scarlet Seedling*; 5, *Sandringham*; 6, *Washington*.—*C. H.* The *Pea* is known as the *Purple-podded Pea*. The *Apple* is a very fine specimen; it has much the appearance of *Bramley's Seedling*, but is too sweet for that variety. It is probably *Baron Wolseley*.—*C. W. B.* The *Peach* arrived in a condition of pulp. Send other specimens not so ripe, and pick them with greater care.—*C. C.* The *Pear* was decayed; it is certainly not *Emile d'Heyst*.—*J. W.* *Nectarine Elruge*.—*W. W., Chelmsford.* A very nice *Apple*, possessing good size and flavour. Send six of the best fruits to the Royal Horticultural Society's Fruit and Vegetable Committee.—*C. E. M.* 1, *Dumelow's Seedling* (Wellington); 2, *Allington Pippin*; 3, *Winter Hawthornden*; 4, *Towers of Glamis*; 5, *Warner's King*; 6, *Queen Caroline*. The best plan in the case of the *Holly* stump is to grub it up and burn it.—*A. J. C.* You send more than the proper number; a small contribution to the R.G.O.F. box would be appropriate. 1, *Dean's Codlin*; 2, *Fondante du Panisel*; 3, *Beurré Diel*; 4, *Beurré Bachelier*; 5, *Waltham Abbey Seedling*; 6, *Melon Apple*; 7, *Ne Plus Meuris*; 8, not recognised; probably a local variety; 9, *Pitmaston Pine Apple*; 10, *White Nonpareil*; 11, not recognised; 12, *Golden Harvey* or *Brandy Apple*; 13, *Pile's Russet*; 14, *Norfolk Beefing*; 15, *Small's Admirable*; 16, *White Westling*; 17, *Emperor Alexander*; 18, *Gooseberry Apple*; 19, *Jolly Beggar*.

PLANTS: *John Rigg.* 1, *Potentilla atrosanguinea*; 2, *Geranium* sp. (specimen withered); 3, *Polemonium coruleum album*; 4, *Galega officinalis alba*; 5, *Centranthus ruber*; 6, *Echinops Ritro*; 7, *Veronica spicata alba*; 8, *Centaurea montana*; 9, *Coreopsis verticillata*; 10, *Helenium autumnale*; 11, *Tritonia crocos-miflora*; 12, *Sedum spectabile*.—*Henri.* *Helianthus rigidus* var., *Rudbeckia subtomentosa*.—*C. C.* *Asplenium Nidus-avis*.—*J. D. Holmes.* *Boltonia asteroides*.—*Rusticus.* 1, *Verbascum Blattaria*; 2, *Linaria bipartita*.—*R. A. B.* 1, *Pteris tremula*; 2, *Adiantum cuneatum*; 3, *Blechnum occidentale*; 4, *Lastrea rigida*.—*F. G.* *Zygopetalum intermedium*.—*Foreman.* You have exceeded the proper number. 1, *Mystacidium filicorne*; 2, *Lycaste aromatica*; 3, *Oncidium concolor*; 4, *O. cucullatum*; 5, *Saccolabium curvifolium*.—*H. C. M.* 1, *Aster novæ-belgii Nancy*; 2, *A. n.-b. Robert Parker*; 3, *A. novæ-angliæ J. F. Raynor*; 4, *A. n.-a. Melpomene*; 5, *A. novæ-belgii floribundus*; 6, *A. diffusus horizontalis*; 7, *A. cordifolius*; 8, *A. Esme*; 9, *A. novæ-belgii Elaine*; 10, *A. n.-b. Irene*; 12, *A. Amelus*; 13, *Helianthus rigidus*; 14, *Dahlia "Glare of the Garden"*; 15, *Aster lynosyris*; 16, *Chrysanthemum maximus*.

NARCISSUS BULBS: *A. P.* The trouble is due to the bulbs being imperfectly matured. There is no disease present.

NEW ZEALAND HORTICULTURAL PAPER: *J. L.* The *Journal of Horticulture*, published at Market Buildings, 44, William Street, Melbourne, Australia; price 6d. monthly.

OAK LEAVES DISFIGURED: *Wm. Clarke.* The injuries on the Oak leaves are not due to any fungus or insect attack, but are caused by some climatic conditions. They may be expected not to occur in other seasons.

PAPER-WHITE NARCISSUS AFTER FORCING: *C. L.* In an ordinary way, the bulbs of these are of little value after forcing. The depth of planting has little to do with their subsequent behaviour, and even in the hands of the specialist the bulbs take some time to recover. They are subjects suited to a warmer climate than our own, hence their slow recovery.

PEAR SHOOTS INJURED: *W. L. Littlewood.* The pest which has attacked the Pear shoots is the "slug worm" (*Eriocampa limacina*). It can be kept perfectly in check by spraying early in the season with arsenate of lead (best used in the form of Swift's Arsenate of Lead Paste). There was no need to cut down the tree. A full account of this pest is given in Leaflet No. 62 of the Board of Agriculture (free on application to the Secretary, 4, Whitehall Place, London).

PELARGONIUM WITH YELLOW LEAVES: *Constant Reader.* You do not specify the nature of the disease observed on the "Geranium." We conclude that the yellowing of the foliage is the "disease." No insect or fungus is present on the specimens sent; the yellowing of the foliage appears to be due to some cultural cause.—*C. Fletcher.* The *Begonia* is attacked by the very common mould *Botrytis cinerea*. The same disease attacks *Pelargoniums* and *Vines*. Do not allow any dead or decaying flowers, leaves, &c., to remain on any plants in the house. Spray the *Begonias* lightly with liver of sulphur solution (1 ounce to 3 gallons of water) before the flowers open. Keep the air as dry as possible, as *Botrytis* flourishes in a humid atmosphere. The example of *Galium splendens* sent was insufficient for purposes of examination; please send a larger piece, packed carefully.

ROSE SLUG WORM: *G. M.* To eradicate the Rose slug worm, remove the surface soil during the winter and replace it by fresh mould. The old infested soil should be deeply buried in some out-of-the-way part of the garden. For *Violet* see reply to *Miss Lees*.

SPIRÆA JAPONICA: *R. F.* The variety *Anthony Waterer*, when obtained true, is superior in colour to the variety known as *Bumalda*.

TURF DYING: *G. W.* Soak the turf thoroughly with a solution of sulphate of iron—1 lb. to 2 gallons of water, three times at intervals of a fortnight, commencing next March.

VIOLETS DISEASED: *Miss Lees.* The injury is caused by a fungus, *Cercospora violæ*. The diseased portions of the leaves fall out and infect the soil, and the only means of checking this complaint is to remove all the plants, pick off all diseased leaves, and plant in fresh soil.

WEED ON LAWN: *A. R.* Apparently *Prunella vulgaris*, but the specimens are not large enough for correct naming. In any case, the weed may be exterminated by application of a nitrogenous manure, which will cause the grasses to grow luxuriantly and crowd out the weeds.

WOODLICE IN ORCHID HOUSE: *F. G.* Clear out all rubbish which might harbour the woodlice and cleanse any of their haunts on the staging or underneath. If there are any inverted pots with plants raised on them, examine them and destroy any of the woodlice that may be found. If the insects are specially troublesome to certain plants in baskets or in pots, let the plants get tolerably dry and then immerse them in water until the woodlice appear, when they can be destroyed. Afterwards get some hollowed-out halves of Potatoes and place them hollow side downwards as traps. Examine them frequently and destroy the insects secreted in them.

Communications Received.—*C. S. C.*—*V. H. P.*—*G. G.*—*L. G. P.*—*Miss M. M. W.*—*Plantsman*—*W. L. M.*—*H. O. M.*—*S. & Sons*—*H. H.*—*Penzance*—*E. H.*—*J. G.*—*S. A. J. D.*—*E. M.*—*H. S. T.*—*R. P.*—*B.*—*Chloris*—*A. C. H.*—*Alicante*—*H. W. W.*—*C. E.*—*R. R. H.*—*F. W.*—*W. H. Y.*—*W. J. J.*—*W. A. C.*—*W.*—*Constant Reader*—*W. P. R.*—*W. E. B.*—*A. P.*—*H. A. V.*—*W. E. G.*—*J. W. H. B.*—*Sheffield Bees, Ltd.*—*A. S. H.*—*Cox*—*J. T.*—*Old Reader*—*E. G. F.*—*J. F.*—*Ltd.*—*S. B.*



VIBURNUM HENRYI, A NEW CHINESE SPECIES.
AWARDED R.H.S. FIRST CLASS CERTIFICATE ON SEPTEMBER 27, 1910.

THE

Gardeners' Chronicle

No. 1,242.—SATURDAY, October 15, 1910.

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AUTUMN FRUIT TOPICS.

THE autumn weather has been very favourable for fruit growers. The abundant sunshine of September, in the south, at least, has ripened late Apples splendidly, and never have they coloured more brilliantly. It is to be hoped that another effect will be found in the proper ripening of fruit-buds for next year's crop. The wet weather of the first half of the year promoted plenty of wood growth, and now we have had a dry and sunny month to ripen it. Never has there been less strong wind up to the end of September to blow Apples off the trees. There was a gale in the south on October 2, but it lasted for only a few hours. Again, for preparing land for fresh plantations, the conditions of the past month were perfect. For ploughing and sub-soiling, the land must not be too hard on the surface for the plough to enter it. Corn stubbles have become very hard recently, but were not so immediately after the crops had been cleared off the fields, and, besides, fruit is best planted after such crops as Potatos or pulse, which are either liberally manured or are in themselves nitrogen accumulators, and the land always works well in dry weather after such crops. For the numerous fruit growers who are also growers of Potatos, the dry weather has been a great advantage. In the south, Potatos for the most part are raised before the end of September, and this year, in consequence of the prevalence of disease, the crop was dug up, as a rule, earlier than usual.

THE APPLE CROP.

It would appear that this crop is more satisfactory than early expectations. In September, good fruits for cooking were making only 2s. 6d. or occasionally 2s. 9d. per half-sieve, which are very poor prices for large Apples in a season of short crops. London, as usual, was the worst of markets. Some excellent fruits of Warner's King sent there were given away at 1s. 9d. per half-sieve for the firsts and 1s. 3d. for the seconds. At another market, part of the same lot sent on the same day made 2s. 9d. and 1s. 6d. These Apples were thoroughly well graded and packed. In another case some "special firsts" of Lord Derby and Bramley's Seedling off young trees, every Apple extra large, made only 2s. 6d. per half-sieve. This was not in London, but in a much better market. The price was very disappointing, as the Apples were good enough for a show. Dessert Apples have sold well, but not much better than usual.

BLAMING FRUIT GROWERS.

The periodical censuring of British fruit growers has not been lacking in the daily and other papers this autumn. To a great extent it is of the character of a parrot cry, and probably most of it is written by men who really know nothing about the subject of marketing fruit, and who merely repeat what others have said. It relates chiefly to the grading and packing of fruit, and many of the remarks show ignorance of the circumstances. For example, one piece of criticism blames one fruit grower for not grading Plums and packing all but the worst in nice little boxes. This is all very well for dessert Plums, but for ordinary cookers it is absurd, so far as it relates to large growers, who often send 100 half-sieves in a day. They are packed in the field as they are picked, and despatched at once to market. To grade them would involve the employment of a great many extra hands, and in an ordinary season it would not pay, even if it would when prices were as high as they were in the season lately ended. When there is a fair crop, mid-season plums commonly make only 2s. to 3s. per half-sieve, and where there is a great crop large quantities go at 1s. to 1s. 6d. Such prices would not pay for grading or for non-returnable boxes, instead of the salesmen's half-sieves. It is a question, indeed, whether any Plums or Apples, other than choice dessert varieties, would pay for non-returnable boxes. As to Apples, the critics write as if none or hardly any of us grade and pack properly. No doubt there is still a great deal of careless and dishonest packing, but most of the extensive growers grade and pack well. The rubbish that outsiders see in Covent Garden is mainly the refuse left after all the good fruit of the day has been sold, as most of it is before our critics are out of bed. Again, it is nonsense to talk of half-sieves causing the bruising of Apples. If a strip of paper is placed inside the rim of a half-sieve, and a little hay or wood-wool is put in the bottom, the basket then being lined with tissue paper coloured to indicate grade, and so placed as to come over the top of the fruit when the packing is complete, and hay or wood-wool is put over the tissue, to be covered finally with newspaper or brown paper tied on, the fruit will travel well without bruising. Moreover, when made nicely level at the top,

well-graded Apples present as attractive an appearance in a half-sieve prepared as indicated as they do in any kind of package. But now for a little misgiving in reference to precise grading. Ever since I first grew Apples for market, I have graded carefully and honestly. My principal salesmen have often complimented me upon this fact. But I often doubt whether I am fairly repaid. Unless a grower becomes known as a good grader and honest packer, and the buyers of his fruit know who has sent it, how are they to be sure that they will find it as good in the lower part of the package as it is on the top? They are used to "topping," and allow for it when they buy. Thus they cannot tell that they need not make any such allowance in the case of packages sent by a careful and honest packer, unless they know him as such, and are informed when they have his fruit before them. Probably they are not told the name of the sender in one sale out of a hundred transactions, and if this is the case, the good and honest packer is not fairly rewarded for his care and good faith.

COUNSELS OF PERFECTION.

Mycologists and entomologists sometimes give impracticable advice. Currant leaf-spot is unfortunately a very common disease, and a very beautiful one. In addition to spraying against it, growers are advised to rake up and burn the fallen leaves. Fancy doing this on 20 or 30 acres! Even if the leaves could all be raked up at one time, the operation would be a tremendous one, especially as the leaves could not be burnt among the bushes, but would have to be carried by hand to the nearest roadway, and burnt there, or carted away. But as the leaves are gradually falling for about six weeks, half of them would be rotted and incorporated with the soil before all had fallen, if not raked up more than once. Is it certain that the disease lives in an infectious form on leaves rotted and mostly incorporated with the soil by cultivation, hoeing, or digging? If not, the herculean labour of collecting and burning is superfluous. In any case, two or three sprayings while the leaves are on the bushes would be infinitely less laborious than the collection of fallen leaves. *A Southern Grower.*

NEW OR NOTEWORTHY PLANTS.

SOBRALIA BLANDA. KRANZL. N.SP.*

THIS new species of *Sobralia* flowered in the collection of Mr. Paul Wolter, Magdeburg. Wilhelmstadt, who informed me that he received it from England as a hybrid of doubtful parentage. After a careful examination, I found that the plant resembles, in nearly all characters, the true species, *S. Lindleyana*, Reichb. A notable difference, however, consists in the scales or bracts

SOBRALIA BLANDA, KRANZL., N.SP.—Caules stricti, ad 50 cm. alti, glaberrimi, foliosi. Foliorum vaginæ glabræ, estriatæ, 4-5 cm. longæ, excepto folio supremo subflorali, cujus vagina ampliata, laminæ sessiles oblongæ, acuminate, 7-nerviæ, coriaceæ, 15-18 cm. longæ, ad 6 cm. latæ, supra 9 cm. longæ, 3 cm. latæ. Flores solitarii, succedanei ex vaginis foliaceis, viridibus, albo-marginatis glabris orientes. Flores candidi, labellum medio in disco aureum. Sepala lanceolata, 8 cm. longæ, medio 1.8 cm. latæ. Petala teneriora, oblongo-lanceolata, 7 cm. longæ, medio 2.2 cm. latæ. Labellum e basi cuneata valde dilatatum, trilobum, lobi laterales rotundati, lobus intermedius subquadratus, profunde bilobulus, margini totius labelli a dimidio undulatus, præsertim in lobo intermedio, discus lineis 5 elevatis rectis non propriè "costatis" et lami medium usque decurrentibus percursus, labellum 7 cm. longum, quo latissimum 4.5 cm. latum, discus glaber, bevisime velutinosus (nec papillosus nec pilosus) Gynostemium breve, stelidia uncatæ, retrorsa.

of the flowers, which are short in *S. Lindleyana* but long and herbaceous (like *S. macrantha*) in *S. blanda*. The leaves of *S. Lindleyana* are said to be short and stiff, in *S. blanda* they are large and well developed. The flowers resemble those of *S. Liliastrum* and *S. Lindleyana*, especially in the white sepals and petals and the golden-yellow centre of the disc. The lines of the latter are a little higher than the surrounding area, but there is no proper creasing. The "rose-coloured dots," quoted by Reichenbach in the description of his *S. Lindleyana* are wanting. At first, I had some idea that it was an albino of some purplish-flowering species, but then the question arose—what species? The number of *Sobralias* with cone-like inflorescences, herbaceous, glabrous bracts, large, broad leaves and glabrous, unspotted sheaths and a lip without a crest is small, and among these species there is none similar to this new one. As the plant was said to be a hybrid, I looked in the *Orchid Stud Book*, and found nothing similar to it, the three hybrid *Sobralias* quoted in this work being totally different plants. The conclusion is, that we have to deal with a very pretty new species in the way of *S. Liliastrum* and *S. Lindleyana* (both species rather rare in collections), but belonging nearer to the *macrantha* group of *Sobralia*. It is a plant of medium size for a *Sobralia*, bears bright green, rather large leaves, and produces at intervals the clear white flowers which are of 15 c.m. diameter, when fully developed. The lip is also white, except the throat and the middle part of the disc, these parts being golden-yellow. The flowers last in perfection for one day or perhaps a little longer. Nothing is known as to its habitat. *F. Kranzlin*.

PLANT NOTES.

THUNBERGIA NATALENSIS.

EVERY autumn I am more and more struck with the beauty of *Thunbergia natalensis*, yet it seems unknown even to those who have a wide acquaintance with good gardens. True the plant cannot be grown everywhere, for some young plants which I grew from seed and placed out last autumn all perished except those which were situated within a yard of a south wall, a distance which proved sufficient to save them. Here, the plant is grown in a bed made on the south side of a greenhouse, the bed is covered with lights all the winter, but the sides are open to the air. In this border, *Gerbera Jamesonii* is as happy as the *Thunbergia*, and grows to a great size. In the warmer corners of England in Devon and Cornwall, in South Wales, and in the south and west of Ireland, the *Thunbergia* ought to be thoroughly at home without any protection. The plant grows about 2 feet high, the flowers drooping horizontally and are large, 2 inches long, and handsome. The limb is blue or mauve and the tube yellow, forming a delightful combination of colours. It sets seeds with the greatest freedom. The seed vessels, when ripe, split open, and throw the seeds to a considerable distance. The blooms are useless in a cut state, as they fade almost at once, but the plant is an object of great beauty when in bloom, and provides a display for several weeks. *A. C. Bartholomew, Reading*.

LÆLIA DEGEESTIANA.

THIS variety (see fig. 113) was shown by Mr. William Thompson, Walton Grange, Stone, at the meeting of the Royal Horticultural Society on September 27, when it gained an Award of Merit. It belongs to the *Jongheana* section. The lip is a bright, rich yellow, that shows well against the white sepals and petals. The mixture of white and yellow was to be expected, seeing its parents were the beautiful *L. Jongheana alba* and *L. flava*.

NOTES FROM A "FRENCH" GARDEN.

THE transplanting of the seedling Lettuces is now being done. They are lifted from the seed beds, and the main roots are pinched off to induce the formation of side roots. In these gardens many thousands of Lettuces will be pricked out in the course of the next two or three weeks, and it may be useful to state the system adopted. The cloches are first set on the bed in three rows about 8 or 9 in each row. One of the outside rows is then removed, a board, 1 foot wide and 10 feet to 12 feet long, being placed along the row where the cloches stood. The workman kneels on this board, and pricks out those in the middle row, whilst another workman plants the outside rows. The Lettuces are planted in the order they were sown, the varieties being kept separate.

the same time as the Lettuces is now ready for blanching, by means of mats, hay or leaves.

At this time of the year it will be two or three weeks before the leaves are suitably blanched. The Batavian Green Endive will not be blanched until some time next month, as the leaves are much improved after they have experienced a slight frost. The Ox-heart Cabbages sown in August are ready for planting in their final quarters. They should be set 14 inches to 18 inches apart, in heavily manured ground, selecting a sheltered position whenever possible.

The Celery growing in the old manure beds should be blanched without delay, so that the manure may be ready soon for other crops. The Carrots sown in July are fit for pulling. Where plenty of room has been allowed and frequent waterings given, Carrots have grown well this



[Photograph by John Gregory.]

FIG. 113.—LÆLIA DEGEESTIANA: SEPALS AND PETALS, WHITE; LIP, YELLOW.

(R.H.S. Award of Merit on September 27.)

Sufficient room must be allowed for the second transplanting of the Cos Lettuces about the second fortnight of November. The grower will need to guard against slugs, which are very fond of young Lettuces; many of the pests may be caught in the early morning while they are still on the bell glasses. Mildew is often very troublesome and is best combated by growing the plants as hardy as possible, and covering the cloches only when frost is imminent. After the end of this month, a little ventilation may be allowed. Lettuces planted during the middle of August are ready for marketing, but the heads may be kept in good condition for two or three weeks longer, provided they are covered with lights, and receive ample ventilation both day and night. The batch of curled Endive set at

season, and their bunching will be a much easier matter than it was last year.

The fine weather of the last few weeks has been favourable to the French gardener; the decayed manure, which will form the soil for the hot beds, is in a splendid condition; all seedlings are clean and sturdy, and things generally are very favourable. The returns for the past season have not been remarkable. Prices for Melons have been 30 to 50 per cent. lower in Covent Garden than they were two years ago, but these sold to provincial retailers have given a good, average return. It must be remembered, however, that June and July were both cold and dull, and that fruits such as Melons are most largely consumed when the weather is hot; also there was an increased supply. *P. Aquatics*.

RARE PLANTS AT ALDENHAM.

THE illustrations in figs. 114 and 115 are of two species of *Rubus*, which were included in the collection of seeds sent home by Wilson. They were planted in their present positions 12 months ago last spring, and have made excellent growth, the poles being quite 9 feet high. The long, trailing growths are extremely effective, but at the time the photographs were taken they had just been tied in.

RUBUS LAMBERTIANUS (fig. 115) is a vigorous grower, and the foliage develops a beautiful autumnal colour. The small, whitish flowers are only just forming in clusters at the terminals of the current year's growth. This species makes rapid growth and quickly covers a large space

THE ROSARY.

CULTURAL HINTS FOR OCTOBER.

THE plants in the beds and borders should be overhauled and worthless varieties removed. Where replanting is intended, the soil should, if practicable, be trenched and manured in readiness. Nearly all kinds of Roses prefer a stiff, loamy soil, a light sandy staple being of little use unless plenty of clay or heavy soil is incorporated with it, and short manure added. In some cases, it will be advisable to dispense with the natural soil altogether, and if it is replaced now, it should be in a suitable condition for planting at the end of this month, or early in November. New beds on lawns, &c., should be dealt with in the same

for the purpose. Those having black bark and crooked stems and also one-year saplings should be rejected. The stocks may be planted in double rows, 1 foot apart, allowing 8 inches from plant to plant, and a space of 3 feet between each pair of rows, so as to allow plenty of room for the operator when budding. Plant the roots about 6 inches deep, tread the ground firmly, and apply a surface mulch of manure.

ROSES OUT-OF-DOORS.

Roses can be had in flower outside from May to November, commencing in spring with the old-fashioned summer bloomers, such as Austrian and Persian Briars, hybrid China, Cabbage, Provence, Damask, Old Pink and Crested Moss, and varieties of *Rosa rugosa*. These will, in due course, be followed in bloom by the Ramblers, Hybrid perpetuals, Tea, Hybrid Tea varieties, and other classes. Beds of Roses planted with varieties of one colour are very effective, especially in lawns. They can be employed as dwarf plants, placed about 2 feet apart, with a few standards intermixed. A selection of the following may be employed for this style of bed. *Dwarf*: H.T. Lady Battersea, Souvenir de Thérèse Levet, and Liberty; *China*: Engène de Beauharnais, Louis Philip and Queen of the Bedders, all of crimson shades; *Standards*: Merveille de Lyon, Madame Lacharme, Boule de Neige, or Frau Karl Druschki, of white shades. Another good combination is obtained by employing cream and white sorts such as (dwarf) White Maman Cochet, The Bride, Bessie Brown, Madame Hoste, Gustave Regis; (standard) shades of scarlet crimson, Captain Hayward, Prince Camille de Rohan, Ulrich Brunner, or Dupuy Jamain.

October is the best month for planting cuttings of hybrid perpetual, Climber and Rambler Roses. These strike best in a north aspect. Well-ripened shoots of Hybrid and Tea Roses will root under a west wall, but some dry Fern should be shaken amongst them during very cold weather for protection from cold. The cuttings should be selected from hard, well-matured shoots. They should be about 8 inches or 9 inches long, and the cut made beneath a joint. The cuttings may be planted in rows in sandy soil, merely digging out a sloping trench about 1 foot deep, placing some leaf-mould and sandy grit in the rows, and then covering the cuttings firmly about two-thirds of their depth. They can be either placed in single rows or in beds, made 4 feet wide, allowing a distance of 2 inches between the cuttings and 18 inches to 2 feet between the rows. Cuttings of Climbing and Rambling sorts may be made longer, and allowed a little more room in the rows. After the planting is finished, mulch the ground with half-spent manure to a depth of 3 inches or 4 inches.

It will soon be time to pot up a stock of Roses for forcing—to bloom after Christmas and onwards. The most suitable for the purpose are the Tea and Hybrid Tea Roses. Maiden plants, carrying three or four well-ripened shoots, and plenty of fibrous roots, should be selected; 5 inch and 6 inch pots will be large enough. Those of the Hybrid Tea and China classes may be plunged outside in ashes until December, or until root action commences, when they may be brought into a light house and sparingly pruned. I have prepared a list of Dwarf Roses, suitable for forcing, as follows: (China, on own roots): Mrs. Bosanquet, Hermosa, Gruss an Teplitz, Madame Fabvier, the old Cabbage Provence, the old Cabbage Moss Rose; (Teas and Hybrid Teas on the seedling Briar): Madame Falcot, Safrano, Niphotos, Homer, Marie Van Houtte, Madame Hoste, The Bride, Perle des Jardins, Richmond, and Liberty; (Hybrid Perpetuals on the Manetti stock): Antoine Ducher, Eugenie Verdier, Madame C. Wood, Mrs. John Laing, Madame Gabriel Luizet, Mrs. Sharman Crawford, Hugh Dickson, John Hopper, Margaret Dickson, Marie Baumann, Victor Verdier, Duchess of Albany, Countess of Oxford, Prince Camille de Rohan, and Sénateur Vaisse. J. D. G.



FIG. 114.—*RUBUS ICHANGENSIS* IN ALDENHAM HOUSE GARDENS.

when planted in beds and allowed to trail on the ground naturally.

RUBUS ICHANGENSIS (fig. 114) is a most distinct and beautiful Bramble, with leaves of a striking metallic-like lustre, and conspicuous also because of their beautiful outline. So far, it has not flowered with us. This plant also makes excellent growth when allowed to trail over the surface of the ground.

PAULOWNIA SP.—The plant shown in fig. 116 is a new species of *Paulownia* which Wilson specially described in his letters to Prof. Sargent as being of great garden value. From the altitude at which it occurred it is expected to prove perfectly hardy. The flowers are described of a beautiful purple-violet colour. The accompanying illustration represents a young plant growing freely at Aldenham. E. Beckett.

manner. The planting of standard briars intended for budding should claim attention first, but as the sap is still active, it will be advisable to defer the planting until about the 20th of this month. These standard stocks are useful for many purposes. Some may be employed for budding new and improved varieties, a few may be trained as tall as 5 feet, and others not more than 3 feet. The taller ones are useful as stocks for weeping and trailing varieties of the *Wichuraiana* and *Ayrshire* types. These tall, drooping Roses produce a striking effect either as isolated specimens or planted amongst low growing shrubs. Select specimens with straight stems, about as thick as the thumb, and with plenty of fibrous roots. Useless shoots and all suckers should be removed. Those with bark of a hazel colour, or veined with green and carrying growths about 2 or 3 years old, are the best

NOTICES OF BOOKS.

AN AMERICAN BOOK ON SHRUBS.*

CONSIDERING the enormous extent of the United States and the variety of climatic conditions experienced there—from Maine to Florida on the east and to the arid climate of such States as Arizona and Nevada in the west—a work dealing with the shrubs that can be grown in the States would seem to be an ambitious effort. On looking through this book, however, we find that the term hardy, as applied therein, has mostly the same significance as it carries in this country. But sometimes plants are discussed that appear very strange to us in company with hardy shrubs, such, for instance, as *Phyllocactus* and *Mamillaria*. The limits of this work are, indeed, somewhat arbitrarily drawn, for though such genera as these are dealt with, many others with just as much right to be included are not mentioned. The interpretation of the word shrub is also somewhat elastic, and is made to include *Acer campestre* (often 40 feet to 70 feet high) and *Magnolia hypoleuca*, a timber-producing tree.

The chief feature of the book is the arrangement of the species of all but the smaller genera in keys. These keys are professedly intended to enable the reader to identify his shrub. The one great essential of a key, however, is that it should comprise all the species, but in this book only a small proportion of the species in many genera is mentioned. In *Rosa*, for instance, some 12 or 14 species are included, though quite four times as many are in cultivation. How is the student to know whether his plant is one of the omitted ones or not? *Rosa multiflora*, the type of a beautiful and distinct group of *Roses*, is not even mentioned. In reality, the planning and formation of keys for the identification of plants require a very searching and comprehensive study.

The arrangement of this book strikes us as unsatisfactory. The sequence of the genera is apparently that of Bentham and Hooker's *Genera Plantarum*, but there is no indication as to where one natural order ends and another begins. Then, owing to the system of keys adopted, the description of the shrub precedes its name, which we find it often troublesome to discover in the larger genera. English names have been manufactured, with the frequently unhappy results that attend this practice. What justification is there for calling *Rhus coriaria*, with its large, pinnate leaves, the "Elm-leaved Sumach"? Then, *Ficus erecta* is called the "variable-leaved Rubber plant."

The book, nevertheless, has many good points; the illustrations, to the number of over 600, are remarkably true to nature, and should be distinctly helpful. The letterpress is singularly correct, and shows that the author has given his subject very close and intelligent study. We can only regret that the results have not been published in a more comprehensible form. The book is well printed, and, although comprising more than 350 pages, is less than 1 inch thick and light to handle.

TREES AND SHRUBS AT SYON.†

No garden of the present day has nobler traditions in relation to its trees and shrubs than Syon, and it was a happy idea of the Duchess of Northumberland to obtain the services of Mr. A. Bruce Jackson in preparing a list of the species at present in cultivation there. The compilation has been well done. Beside the botanical name, there are given also the popular

name and the native country of each species. The position of each specimen in the garden or park is also indicated, and the dimensions and history of the more notable examples are given. The list is in no way remarkable for rare specimens, all but a few being well-known subjects in English gardens. It is, however, of great interest on account of the fine development of many of the older examples. Probably no garden as near to Charing Cross possesses so many notable trees as Syon. In Loudon's great work, the Syon trees obtain frequent mention, and at the present time—more than 70 years later—Messrs. Elwes and Henry refer to them often in the statistical part of their work. Many of these specimens appear to have been planted in the 18th century, and we learn from the interesting historical preface that it is tolerably certain that much of the planting

THE GUNNERSBURY GARDENS.

MR. LEOPOLD DE ROTHSCHILD's famous garden at Gunnersbury, with its many characteristic designs, contains such a variety of subjects that the general effects are but little affected by unfavourable seasons. Some of the showy flowers always provide sufficient colour. A visit made on October 1 in the garden attached to Gunnersbury House revealed a glorious display of flowers, and a great variety of autumn tints in the foliage of the trees. The varying shades of red and purple on the vine pergolas mingled with the late *Roses* and *Clematises*, and the view from the terrace across the soft, green surface of the pleasure ground stretching towards the lake containing *Water Lilies* of various tints was charming. From the terrace itself a touch of magnificent colour was seen on the roof of the old museum,



FIG. 115.—RUBUS LAMBERTIANUS IN ALDENHAM HOUSE GARDENS.

(See p. 275.)

was done under the superintendence of "Capability" Brown between 1750 and 1760.

The book is well and clearly printed, and is interleaved with blank pages for the addition of notes. It is remarkably free from typographical error. After a very careful inspection, we have only been able to detect one small slip, which is the omission of the capital letter in the specific name of *Quercus Vibrayeana*, whereas it is accorded in all other complimentary specific names.

It is to be hoped that the owners of other notable tree and shrub collections in the British Isles will prepare similar records. Such lists would have a great value to planters, whilst the lists of trees in gardens situated outside the zone of comparatively normal climatic conditions would possess a special interest. B.

where there were three tiers of the brilliant scarlet *Salvia* *Pride of Zurich*, faced by innumerable specimens of the rich scarlet *Tropæolum* *Ball of fire*, forming festoons of vivid colour over the face of the building almost to the border beneath, which was also bright with scarlet *Salvia*. The verandah at the entrance of the house was festooned with the *Tropæolum*, whilst the red berries on the *Cotoneaster* beside the pillars, the blossoms of *Pomegranates* and other brightly-coloured flowers all assisted in the general effect; the soft-green foliage of the flatly-trained huge specimens of scented-leaved *Pelargoniums* (see figs. 117 and 118, and Supplementary Illustration), the immense pyramidal *Myrtles*, the *Orange* trees, with finely-coloured fruits, arranged on the terrace helping to show up the

* *Ornamental Shrubs of the United States* (hardy, cultivated). By Austin Craig Appgar. (American Book Co., pp. 352).

† *Syon House Trees and Shrubs*. By A. Bruce Jackson. (West, Newman & Co.) 1910. Small 8vo., pp. 83.

brilliant colours of the *Tropæolum* and *Salvias*. Within the covered way, some tall standard plants of *Datura Knightii* bore many large, pendulous white flowers. The large herbaceous border afforded a good example of bold planting in which the groups are effective at a considerable distance. The plants thus massed into groups included some of the newer varieties of Michaelmas Daisies, among which the bright rose-coloured Mrs. Rayner was conspicuous; *Helenium* "Riverton Gem," yellow and red; *Artemisia lactiflora*, with elegant white plumes; *Polygonum orientale*, of a deep rose tint; *Rudbeckia Newmannii*, *Sedum spectabile*, and *Canna* "King Humbert," with its fine, purple and green leaves and spikes of orange-red flowers. Dwarf *Chrysanthemums*, such as *Soleil d'Octobre*, *Horace Martin*, and *Harrisianum*, planted thickly in large tubs made a fine show, and the Ivy-leaved *Pelargoniums*, beds of Bego

the Transvaal Daisy, *Gerbera Jamesonii*—the plants raised from seeds at Gunnersbury have been established in the open ground for several years—a batch of deep, rosy-carmine-flowered *Amaryllis* *Belladonna*; some brightly-coloured *Ericas* in the Heath garden, and a bed of deep Tyrian-purple *Heliotrope* raised at Gunnersbury. In tanks, were observed blue-flowered *Nymphaea stellata* and the larger and deeper blue-flowered *N. pulcherrima*. Some pretty *Nerines* were also flowering in beds out-doors, and very pleasing was a bed of *Mesembryanthemum roseum*. In the old-time garden was a display of old-fashioned flowers, mostly annuals.

THE PLANT HOUSES.

The most striking feature in the Orchid houses was a stage filled with choice specimens of *Dendrobium formosum giganteum*, which grow with increasing vigour under Mr. Hudson's treatment.

and other showy-flowered Orchids. Another house was filled with *Vanda coerulea*, a noble plant of a very handsome variety of *Cattleya* *Iris* with nine flowers; examples of *C. Armstrongiæ*, several specimens of *Lælio-Cattleya luminosa*, a handsome form of *C. Maronii*, *L.-C. callistoglossa*, pans of the vermilion-coloured *Habernaria militaris*, a good batch of the pretty *Oncidium ornithorynchum*, and *O. varicosum*. In other houses, a pretty display was afforded by *Begonia* *Lady de Rothschild* and *B. Marie*; *Vinca rosea*, *V. alba*, *Nerine Bowdenii*, and other greenhouse flowers.

The fruit season at Gunnersbury House has been very satisfactory; on the fruit trees in pots were still hanging late varieties of Cherries and Plums. There were also seen numbers of Figs and Melons, whilst the fruit room contained a good supply of fruits. The cultivation of fruit trees in pots is largely practised in these gardens; about 1,200 trees are grown, and they are brought into heat in successional batches, some to produce fruits before and others after the outdoor crops are finished.

GUNNERSBURY PARK.

Passing along the terrace to the adjoining gardens under the care of Mr. Reynolds, a similarly lavish display of flowers was found. The terrace front is beautified by flowering Lilies in pots, *Pelargoniums*, and other showy flowers arranged with foliage plants. The view across the grounds at this spot, with the stately old Cedars and Pine trees is very beautiful. Commenting on some few plants which have not succeeded so well as usual this season, Mr. Leopold de Rothschild said that in his long experience such temporary failures must be expected, and that they are not always due to unfavourable seasons. Some things which fail in one place are often to be seen in the most satisfactory condition in another garden close at hand, although cultivated under precisely similar conditions.

The flower gardens, each with a separate design, provide a fine display of flowers. In one, *Heliotrope* is the principal feature. Beyond, is a long border planted with fragrant herbs. On the shady banks and beneath the trees are large patches of the blue-flowered *Crocus speciosus* and pink and white *Colchicums*. One large shrubbery is comprised wholly of ornamental, berried and fruiting species, whilst on pergolas the autumn-coloured foliage of various species of vines prolongs the show of colour which was started by the *Wichuraiana* Roses growing with them.

In the Orchid houses in this part of the establishment, *Odontoglossums* are seen in a grand condition, some being in flower, and overhead are large pans of *Sophranitis*, one fine specimen being still in bloom. In the intermediate house, are *Cattleyas* and *Lælias*, and, in the warmer houses specimens of *Phalaenopsis Rimestadiana* with 10 or 12 fine fleshy leaves and strong spikes of white flowers. One of the warm houses contains a large batch of *Vanda teres*. For many years the plants were unsatisfactory, and were shifted several times from one house to another, but not until they were placed in their present position were they perfectly satisfactory. In another house, a number of robust plants of *Lycaste Skinneri* are in bloom from an importation remarkable in that it has furnished several natural hybrids that have flowered. Several houses are filled with winter-flowering Carnations, the plants beginning to furnish their winter crop of blooms. Other subjects of interest in the plant houses include a batch of *Chironia ixifera*, the plants being a mass of pink flowers; *Begonia corallina*, *Gloriosa superba* and *Allamanda Hendersonii* trailing from the roof; *Amasonia punicea*, a good autumn-flowering plant, and the blue *Griffinia hyacinthina* blooming among other *Amaryllids*. In the many fruit houses are fine crops of Plums, Cherries, Melons, and other fruits. The combined gardens of Gunnersbury House and Gunnersbury Park afford one of the best examples of successful gardening near London. B.



FIG. 116.—A NEW SPECIES OF PAULOWNIA IN ALDENHAM HOUSE GARDENS.

(See p. 275.)

nias, edged with *Matricaria* Golden Ball, the bright-blue patches of *Crocus speciosus* planted beneath the trees, and the many other pretty arrangements were at their best. The great beds of *Rose Caroline Testout*, *Mme. Jules Grolez*, *La Tosca*, and other favourite Roses were finely in bloom.

The Japanese garden with its stepping-stone paths and bridges crossing the brook, its tropical scenes of Bamboos and Palms, its Lilies, *Primula japonica* and other Japanese plants which have thoroughly established themselves, gives a pleasing change. The *Primula* sheds its seeds naturally, and the seedlings soon produce flowers in masses. The Maples were assuming their autumn tints, and noticeable patches of colour in other parts of the garden were furnished by the brilliant scarlet flowers of

Some are seedlings raised at Gunnersbury from seeds discovered on an imported plant. The large, white flowers have a conspicuous yellow disc of the lip, varying from chrome-yellow to deep orange. Many fail to cultivate this plant satisfactorily, often because they arrest its growth for a period like the deciduous *Dendrobiums*, and give it a treatment too cool to suit its somewhat evergreen habit. Mr. Hudson keeps the plants warm and moist from springtime until October, affording a liberal supply of water until the growths are finished and the flower past. Throughout the winter they are still kept in a warm house, but are afforded a restricted supply of water until the new growths appear. In another house, was observed a fine batch of the orange-red flowered *Epidendrum vitellinum majus* in bloom; also plants of *Cattleya labiata*

SCENTED-LEAVED PELARGONIUMS.

THE sweet-scented *Pelargonium* is extremely useful in present-day gardening. Most of the varieties in cultivation are not valuable for their beauty as flowering plants, but there are some notable exceptions, namely, *Clorinda*, a variety which has become an accepted favourite; *Ardens*, a lesser-known variety, with scarlet flowers instead of the pleasing pink of *P. Clorinda*; *Chiswick Beauty*, which has flowers as large as *Clorinda*, and equally floriferous, the colour, a blush-pink with rosy veins; *Countess of Devon*, a perfect gem as a flowering plant, best, I think, described as a miniature fancy *Pelargonium*, with smaller shining foliage, deliciously scented; *Little Gem*, a dwarf plant with Lilac-coloured colours and *Little Pet*, a sport from *Little Gem*, but with rosy-pink flowers.

Amongst those sorts which are grown for the fragrance of their foliage there are several which may be turned to different uses. Those of robust growth, such as *P. capitatum* and *P. radula major* make splendid screens (see Supplementary Illustration), and as such we grow them

which produce small flowers, such as *P. capitatum*, *P. radula major*, *Attar of Roses*, *P. quercifolium* and its varieties, *P. viscosissimum*, as represented in Pheasant's Foot, *P. denticulatum major*, *P. filicifolium odoratum*, and others all thrive well without any pruning or drying off. These we treat in this way, keeping the growth continuously tied in, thus making the plants as large as we need them. In potting these, the potting should be done quite firmly, using the best loam with some leaf-mould, sand and lime rubble. These we never reduce at the ball, but merely top-dress well every spring. During the winter season, they are kept quite on the dry side, and this sweetens the soil.

Those that require a different treatment are *Clorinda* and others of the larger-flowering section. These thrive better if dried off as in the case of the show, fancy, and regal *Pelargoniums*. I have come reluctantly to this conclusion, for *Clorinda* will continue to flower right away into the autumn. Taking *Clorinda* as an example, if it is allowed to grow and flower continuously, as it will do when well cared for, the plant becomes exhausted, and for the following season is not so useful. The variety *Countess of Devon* is another case in point; this is a

serving as screens, and are as healthy and fresh when they come back as they were in spring.

List of varieties.—We grow the following varieties at Gunnersbury. *P. capitatum* (Rose-scented) is also grown largely, I am told, in the south of France, where its essential oil is used to adulterate *Attar of Roses*. *P. radula major* (Balsam-scented) is of similarly vigorous growth. These are the best two for growing into large specimens, either as fans, pyramids, or standards. *Clorinda* is better as a standard than in any other form. *Chiswick Beauty* has only been grown as a pyramid; it is a variety I obtained from the R.H.S. Gardens at Chiswick, hence its name. It is a valuable variety. *P. quercifolium*, the true oak-leaf *Pelargonium*, and the varieties *minor*, *Fair Helen*, and *Mrs. Douglas*. *P. tomentosum* (Peppermint-scented) is a well-known plant. I have a very distinct form, with darkly-veined leaves, one sent me by a keen amateur raiser in Shropshire; this is a very strong grower and will, I think, make a good fan-shaped plant. *Lady Plymouth* is best grown as a dwarf bush, and after about three years is not of much use. *P. viscosissimum* is represented by *Pheasant's Foot*, *filicifolium odoratum*, and *denticulatum major*. These all get somewhat dirty in the foliage when fogs occur. *P. fragrans* (Nutmeg-scented) is quite distinct, and has a strong perfume; it is best grown as a dwarf plant, but it wants renewing frequently. *P. ardens* is useful, both as a pot plant and for bedding. *Attar of Roses* resembles somewhat the perfume of that name in its fragrance; it is a compact grower, and makes a useful pyramid. *Countess of Devon*, as a dwarf plant, is unique. *Prince of Orange* is useful as a flowering plant, as well as for its fragrance; it is a rather delicate grower. *P. crispum* (Citron or Lemon-scented) and *P. crispum major* are both useful plants. Both *Little Gem* and *Little Pet* are useful as dwarf plants, and they flower freely. *Pretty Polly* is a well-known variety, quite unlike any other; it is more like a *Show Pelargonium* in miniature. It makes an excellent pyramidal plant and flowers freely.

We also grow two varieties, raised at Chiswick some years ago, namely, *Richard Dean* and *H. B. May*. These make very compact, neat, plants. The forms of *Unique* we have ceased to grow, and both *Shotesham Pet* and *Mrs. Kingsbury* are of no use to us. A rather delicate grower, called *Lady Mary*, we have lost; it was a pretty variety, with a refreshing perfume. *Jas. Hudson, V.M.H.*



FIG. 117.—PELARGONIUM CLORINDA.

at Gunnersbury, our largest specimen being some 10 feet across and nearly 8 feet in height. These varieties are also very effective when grown as "balloons." Again, as pyramids, these two varieties make useful terrace plants.

For plants of medium size and for pyramids, *P. quercifolium minor* and *P. q. Mrs. Douglas* are both useful varieties, so is the variety *Attar of Roses*.

Among plants of smaller and more bushy growth there are *P. fragrans*, *P. tomentosum*, *P. crispum major* and *Lady Plymouth*. *P. crispum* has an upright or pyramidal growth, but, strange though it may seem, *P. crispum major* is capable of forming a dwarf plant of bushy habit. *P. crispum*, however, refuses to be so treated, but makes a beautiful object when some 4 feet or more in height, and a foot or so in width. *P. crispum* is, moreover, one of the very best for cutting purposes. We have noted a peculiarity with respect to *P. tomentosum*, namely, that it thrives best in shade.

Cultivation.—In my experience the cultivation is of two kinds. Some sorts, and those chiefly

delicate grower, but one that flowers so freely, that the plants need to be given a rest. Young plants of *Clorinda* can always be brought on to succeed those that become weakened, but I am thinking more of this variety as a specimen than in any other form. *Chiswick Beauty* may be kept growing during the winter if necessary; it appears to be an exception to the rule being a robust, sturdy grower.

Pelargoniums as terrace plants.—It is as terrace plants that I find the scented-leaved *Pelargoniums* to be of greatest use. In this form they are very attractive, and their fragrance is refreshing, this latter quality being most noticeable after a shower of rain. Our large, fan-shaped examples do not require so much room during the winter as might be imagined. Being trained flat, they stand next a side wall with a walk in front.

The largest plants were raised from cuttings in 1895, and are still vigorous. These are sent to the town house in Park Lane, at the end of May, and they remain there until the first week in August. They stand in the garden,

THE water, of which plants, on an average, contain 70 per cent., is absorbed from the soil by the root-hairs of the growing plant.

Water forms the vehicle for the passage of the mineral matters, nitrogen compounds, potash, phosphates, lime, &c., which are distributed in solution to the leaves, stems, flowers, and fruit, and constitute, after the plant is burnt, what is called the ash.

Nitrogen is taken up by the root chiefly in the form of nitrates, and serves to form the proteins (albuminous substances) of the plant. After the roots, the leaves are the next most important organs of a plant. The millions of small openings or stomata found on the leaves allow of the passage of carbonic acid gas from the atmosphere, and from every 44 parts by weight of that gas the leaves get 12 of carbon to build up the organic constituents of the plant.

It seems incredible that growing plants should get almost the whole of their carbon from the four parts of carbonic acid that exist in 10,000 of air; but it can be understood, when we calculate that there are 2,160 lbs. of air overlying every square foot of land, and in that amount about 5½ ounces of carbon, which is equal to no less than 7 tons per acre.

Immediately a plant starts into active growth, its roots absorb water and its leaves carbonic

acid, and from these raw materials the green leaf exposed to sunshine manufactures sugar, and, subsequently, starch. Without light, the manufacturing machinery of the green leaf ceases to work, no sugar is formed and the plant has either to live on its capital or starve. So also without the green colouring matter, chlorophyll, for the formation of which iron is essential, the building-up of sugar by the plant does not take place.

In the soil, away from the light, myriads of small organisms, called bacteria, are acting on the humus constituents of the soil, changing them into nitric acid which unites with the potash, lime, magnesia, &c., in the soil to form nitrates.

This process is known as nitrification, and goes on most briskly in moist and porous soils, in the summer time or in glass-houses or conservatories, also when carbonate of lime is present, and at a depth not greater than 3 feet.

The nitrates thus formed or those supplied in artificial manures provide the nitrogen necessary to form the proteins in our growing crops. Besides these organic constituents, there are always found in plants more or less of potash, phosphoric acid, and lime. Hence it will be seen that if a soil is deficient in any of the mineral ingredients found in plants, or if these minerals are not in an available condition to be taken up by the root, plants growing in such soils must suffer, and a full yield and healthy growth are rendered impossible. *J. J. Willis, Harpenden.*

A TEA PLANTER'S COMPOUND.

THERE are few branches of agriculture or horticulture in which are found men whose former occupations have been more varied than are to be met with among tea planters. It may be said that there are as many different folk with as many different origins to be found in the tea industry as there are to be found in a gold mining camp. The writer has been many years connected with tea; so many years, in fact, as to have outlived nearly all his contemporaries. During these years he has met all sorts and conditions of men—soldiers, sailors, engineers, practical gardeners, and gentlemen (broken down and otherwise). There can be no doubt but that the tea industry in India is, to a certain extent, used as a dumping ground. The degenerate son must be got away from home, and if the family happens to have influence in the tea industry it is quite easy to get him dumped on a tea plantation. Some of these "undesirables" turn out well as planters, others make good sportsmen but fail at planting, whilst a great many more get packed home again. But no engineer can possibly get into "tea" unless he is possessed of an unblemished character, and the same rule applies to the practical gardener. There is a comparatively small percentage of the latter engaged in tea plantations, though the gardener is to be found here and there.

It may be asked, what has all this preamble to do with "A Tea Planter's Compound"? It was necessary in order to show that just as we have all sorts and conditions of planters, so we also have all sorts and conditions of compounds.

Compound is an Anglo-Indian term and simply means the enclosure around a bungalow residence. Inside this enclosure are usually found the vegetable garden, flower borders and beds, also fruit trees, and very often a tennis court. The writer has seen some magnificent compounds well furnished with all the best fruit and flowering trees and shrubs allowed to go to ruin just because the planter in charge of the tea garden for the time being knew nothing about these kind of things and cared less. Nevertheless, he has also known some very important experiments carried out in a compound.

Planters, as a rule, know little if anything about tropical agricultural matters previous to their going into "tea." Occasionally one comes in contact with a planter who has had a home train-

ing in technical agriculture, but such men are extremely few and far between. Of course the man possessing this knowledge to start with has by far and away the best of it as far as cultural matters are concerned, just as the engineer excels with his knowledge of machinery and buildings. The compound is usually in charge of a Mali (native gardener) whom we may compare to a garden labourer at home, with nothing of the latter's capacity for work, and the less said about his honesty the better. In the month of June there is a perfectly unlimited supply of the "Queen" Pineapples, besides Peaches, Lichis, Passion fruits and Mangoes. Occasionally a few Bananas are seen growing in the compound, but only of the very best varieties. These fruits can be bought so cheaply in the local bazaars that no one troubles to grow them. *An Old Correspondent.*

THE CROSS-FERTILISATION OF THE POTATO.

TREVIRANUS, in describing the genus *Solanum*, held that the flowers were generally fertilised by the style curving downwards to meet the anthers. Since the latter begin dehiscence at their apex and the style in many instances curves backwards to such a degree that it stands beneath the anthers in the line of the fall of the pollen, it is possible that self-fertilisation is thus accomplished. The well-marked homogamous condition of the flowers of *Solanum tuberosum* favours the hypothesis that, in cases where seed pods occur, they are generally the result of self-fertilisation, therefore, this able botanist and observer was not wholly wrong in this matter. However, in studying the question from observations made in this country, it is well to bear in mind that the plant is not a native. Self-fertilisation may be generally noticed to a large extent with certain varieties bearing coloured tubers, usually of a very coarse type which can hardly be said to be cultivated varieties in the sense in which we regard some of the best field and garden sorts. Those self-fertilising types conspicuous by their red or purple-skinned tubers, always inclined to a certain coarseness, are probably either the original type of *S. tuberosum* introduced into this country, or the seedling-produce of self-fertilised plants from those old varieties which have been carefully selected by the growers of olden days. Many of them are still to be seen, particularly in some districts of Scotland, and they exhibit characteristics which are not desirable in cultivated Potatoes; nevertheless several possess a fine flavour. It is unlikely that any of these old, free-seeding sorts are the product of cross-fertilisation by man. Cross-fertilisation by entomophilous agency is equally unlikely, for the flower does not secrete honey and is but rarely visited by insects, although careful observation has revealed the presence of small, black beetles belonging to the genus *Apion*. These beetles are found but seldom, and are probably there for the pollen which the flower contains; but as their excursions are confined to the base of the anthers where the shed pollen accumulates, it may be assumed that they do not assist in pollination. The coloured varieties mentioned, which are notable for their seed-yielding capacity, have usually lavender, mauve, or purple flowers; they belong to a distinct race of Potatoes, and for breeding purposes—if we except flavour—they may be set aside as of little value to the hybridist. When they are crossed with some of the best modern Potatoes, the progeny is too often either inclined to disease (*Phytophthora infestans*), or to run very much to root branches without tubers, which cultivators aptly term "runners."

In some modern varieties, a somewhat different state of affairs is observed. The absence of the seed pod and the paucity of pollen are two very marked features. Indeed, some kinds do not produce any pollen, and in some instances

where pollen is produced it is sterile. Careful experiments this season with that fine Potato named "Factor" have proved that it is not only sterile to its own pollen, but also sterile to all the "Up to Date" type, of which class Factor is probably the best example, for it is a large cropper and an ideal table variety. It will cross with some of the coloured-skinned varieties, which have also flowers of a similar tint, but the seed-vessels mature very slowly and never attain a large size. Where pollen of white-flowered sorts can be obtained, such as the "Admiral," "Provost," "Abundance," and "Cumberland Ideal," a good set can be obtained on "Factor" and the pods soon attain full size; indeed, the growth of the so-called "plum" is remarkable in comparison with that of the others already noted. I have not experimented with the white-flowered varieties, and cannot admit with certainty that the same rule will apply to them, but the "Admiral" and "Provost," both with white blossoms, while sterile to their own pollen, are readily inter-crossable. On the contrary, the pollen of "Factor" has been found to be absolutely sterile to some 30 other varieties of Potatoes, having flowers and tubers of different colours, and none of them of the "Up to Date" class. The scarcity of pollen renders it tedious and difficult to carry out the experiments, for hundreds of flowers have to be examined. It is an easy matter to raise seedling Potatoes, but it is not so easy to secure such crosses as are likely to produce desirable seedlings.

The result of the intercrossing experiments with "Factor" has confirmed a law already laid down in relation to inter-breeding. That law states that in order to produce a strong and productive hybrid a certain degree of difference is necessary between the parents. When the parent plants are too closely, or too distantly, related, failure is the general rule. Plants which are perfectly sterile to their own pollen, and more or less unproductive when crossed with closely-related individuals, will generally produce good hybrids when crossed with more distantly-related varieties. "Factor" Potato has shown that, while sterile to its own pollen, and also to that of the more nearly-related varieties, and only capable of forming seed-vessels with difficulty when crossed with sorts bearing flowers of almost the same shade but with differently-coloured tubers, yet it will readily set full-sized seed pods if crossed with varieties bearing white flowers. I intend to "self" the seedlings when they flower, and to treat the next generation on Mendelian lines. *George M. Taylor, Midlothian.*

THE ALPINE GARDEN.

LEPTARRHENA AMPLEXIFOLIA.

THIS handsome creeping plant is a new introduction from the Rocky Mountains of N.W. America. It is found on mountain slopes, margins of rivulets and in wet places on the Cascade Mountains, Washington, at 4,000 feet to 5,000 feet elevation, near the region of perpetual snow. It forms compact tufts of rooting stems interlaced and matted together. The stems are thick and fleshy, while the thick and leathery leaves are oblong ovate, being 2½ inches long by 1½ inches broad. They are evergreen, glossy green on the upper surface, sessile on the stems, and have slightly dentate margins. The almost leafless flower stems grow 12 inches to 15 inches high, and bear panicles of small, white flowers. The species is perfectly hardy, and forms a free-growing plant, well worthy a place in the bog garden. The plant may be increased by seeds, but propagation is also easily effected by means of cuttings. The genus *Leptarrhena* belongs to the Natural Order Saxifragæ, and is monotypic; *L. pyrolifolia* is a synonym of *L. amplexifolia*. *W. L.*

FLORISTS' FLOWERS.

THE SWEET PEA SEASON.

THE atmospheric conditions during September were almost ideal for the culture of Sweet Peas. I visited many gardens during last month, including those at Lochinch Castle, the far-famed residence of the Earl of Stair, and Logan House, and I have never seen the Sweet Peas there finer at this season of the year. In the school gardens of this picturesque, peninsular parish, in one of which the Sweet Peas are exposed to every wind that blows, they have been marvellously fine. In my own garden, I grow them under considerable difficulties, as they do not get adequate sunlight, owing to the presence of a number of lofty and wide-spreading trees. For this reason, they require a good deal of attention, chiefly in the form of fresh, fibrous soil, and manurial applications in liquid form. But I have this consolation, that, though the flowers are somewhat smaller than in other and sunnier regions, they are not scorched by the strong summer sunshine, and last longer when in bloom.

In the matter of popularity, "crenulated" hybrids have for some years predominated; but I think that too much importance has been of late attached to the waved varieties, and that such superbly decorative kinds as Dorothy Eckford, Helen Pierce, Frank Dolby, and Queen Alexandra are in danger of being undeservedly ignored. These, wherever Sweet Peas are adequately cultivated, are still among the greatest ornaments of our gardens. We cannot afford to part with such splendid flowers as these, produced, as they are, in the grandest profusion, especially if, as experts affirm, we are parting with fragrance for the sake of crenulation. It is sufficiently manifest that Sweet Pea hybridisation, while creating larger and perhaps, on the whole, more fascinating flowers, has its own peculiar dangers and limitations. One of the finest attributes of this glorious annual is its incomparable perfume; and we cannot sacrifice this supreme attraction merely for the sake of picturesqueness of form and more commanding dimensions. For this reason, I sincerely trust that the varieties I have enumerated, not to speak of many others which are not "waved," but conserve their splendid fragrance, will not be neglected.

At the same time, I do not depreciate the size and effectiveness of such Spencerian hybrids as Marie Corelli (an unquestionable acquisition of luminous hue), Senator Spencer, W. T. Hutchins, Mrs. Routzahn, and Aurora Spencer, which have come to us from California, where, at the Santa Clara Nurseries, a cross has been made by Mr. Henry Ohn between my Eckfordian namesake and Countess Spencer: with what result I have yet to learn.

Two very notable waved varieties have recently been introduced by Messrs. Dobbie & Co., viz., Masterpiece and Mrs. Hugh Dickson, of which the former, a flower of most exquisite lavender colour, was raised by Mr. Malcolm, of Duns, in Berwickshire. It is a precious addition to the waved varieties, and its blooms are very large. Mrs. Hugh Dickson is also an important acquisition. It may be characterised as a greatly-improved version of Mrs. Henry Bell, for while it has already proved itself much more reliable than its predecessor, and more conservative of its colours, it is much less susceptible to adverse atmospheric influences. Evelyn Hemus is another very beautiful variety.

Of pure white, crenulated varieties, which are of supreme value for garden decoration, three of the most attractive are Etta Dyke, White Spencer, and Nora Unwin; but I greatly question if any one of these is more effective than Dorothy Eckford. David R. Williamson, Wigtonshire.

The Week's Work.

PLANTS UNDER GLASS.

By JOHN DONOGHUE, Gardener to JOSEPH PICKERSGILL, Esq., Bardon Hill, Westwood, Yorkshire.

Begonia Gloire de Lorraine.—The removal of the flower-buds should be discontinued if the plants are required to flower their best during November and December. A light and well-ventilated house is the most suitable structure for this Begonia during its flowering period. They may be grouped in their various colours with a few graceful Bamboos or Cocos Palms as relief, and a groundwork of *Panicum variegatum* or *Pittonia Verschaffeltii argyroneura*, with a few plants of Begonia Rex and small Adiantum Ferns. During last season, I observed a novel method of training these plants; the shoots were trained on either side of a wire screen, painted green, about 2 feet high and 18 inches wide at the top and tapering downwards. The atmosphere of the house should be kept somewhat drier than before, and ventilation should be carefully given, leaving the top ventilators open a little during the night with the temperature ranging from 50° to 55°, and an advance of a few degrees during the day time. Afford a light shade during bright weather, and regularly apply liquid manure at intervals of a week or ten days, with an occasional application of clear soot water. Some approved artificial manure will be beneficial to the plants when they are developing their blooms.

Roman Hyacinths.—Bulbs that were potted or placed in boxes early in August should now be removed from the beds in which they are plunged. If the leaves are blanched the plants may be placed under a north wall until the green colour develops. Any attempt at forcing before the plants have made plenty of roots will result in failure. They should be brought at first into a greenhouse or a structure where a similar temperature is maintained, and when they have made a good progress remove them to warmer quarters. Where the bulbs have been forced into flower under the influence of high temperature, it is advisable to accustom the plants to cooler conditions by placing them in a greenhouse.

Luculia gratissima.—This is a splendid subject for autumn blooming, and succeeds well in the stove. Treated as a climber, it produces a beautiful autumn display, its sweetly-perfumed blooms being very attractive. As the plants complete their season of flowering, they may be subjected to a short period of rest.

THE HARDY FRUIT GARDEN.

By A. R. SEARLE, Gardener to the Marquis of NORTHAMPTON, Castle Ashby, Northamptonshire.

Vines on walls.—It will be advisable to cut any bunches remaining on the vines, with a little wood attached, so that the ends may be placed in bottles containing water. Stand them in a moderately warm room, where the air circulates freely, and the Grape will continue to ripen and improve in flavour. The leading shoots of the vines may now be considerably shortened, and the laterals cut back to three or four leaves. This will enable the sun to reach all parts of the vine and favour the maturing of the wood before bad weather sets in. The borders should be examined, and if the soil is found to be dry, a copious watering should be afforded: an application of liquid manure will cause the buds to become plump and hasten the ripening of the shoots.

Raspberries.—October is a suitable time for making new plantations of Raspberries. If the soil is naturally wet and cold, it will need careful preparation. It may be necessary to drain the land, afterwards digging it deeply, incorporating, at the same time, a liberal dressing of light manure and leaf-mould, and also such materials as road scrapings and ashes from the bonfires. The Raspberry is a shallow-rooting plant, therefore the manure should not be buried too deeply. If the soil is light and naturally well drained, it will only be necessary to trench it and work in a liberal amount of well-decayed manure. The planting of the canes may be carried out in a similar manner to that advised in the calendar for January 15.

Walnuts.—The crop of Walnuts is a very light one in most places. The nuts have commenced to drop, showing that it is time for them to be knocked off the trees for storing. The husks

should be removed; but if it is not convenient to do this for a day or two, the nuts should be spread out thinly in a dry, airy shed, for when they are placed thickly together they soon become heated, and the husks decay, causing the shells to become discoloured, and thus detracting from their appearance on the dessert table.

The Blackberry and Loganberry.—If not already done, these plants should be pruned without delay. Cut out all the old fruiting canes and weakly growths, leaving only a few of the best shoots for next season's fruiting. When the pruning is finished, let the new canes be tied loosely to their supports, in order that they may receive the full benefit of the sunshine. All Brambles are gross feeders, and require a deep rooting medium. They are much benefited by frequent applications of liquid manure.

General work.—Continue to gather the late varieties of Apples and Pears as they become ripe, but do not be in too great a hurry to harvest them, as most varieties are later this year than usual in maturing, and if they are gathered too soon they will probably shrivel. Where grease bands are applied on Apple trees for trapping the winter moth, they should be placed in position at once. The females usually emerge from the soil early in October, and ascend the trees to lay their eggs. They are later than usual in doing this this year, not one having been noticed up to the present in these gardens.

THE FLOWER GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Hertfordshire.

Preparation for planting.—Any transplanting of shrubs intended to be done this season may be commenced shortly, and now that the ground is in a good condition the holes may be prepared in advance. The holes, when in not too prominent positions, form excellent receptacles for depositing leaves and other vegetable rubbish, which will quickly decay, and the humus will benefit the tree or shrub that is to be planted. Where much planting is to be undertaken, it may be proceeded with at once, as most deciduous subjects have lost their leaves, and often during mid-winter the work has to be suspended for a considerable time, owing to unfavourable weather conditions. In cases where it is necessary to remove any plants, trees, or shrubs before their new positions can be got ready, the roots should be temporarily covered with soil, or old mats, to keep them moist. Labels attached to plants that are heeled in temporarily often get covered with soil, and rot, and this should be guarded against. The preparation of the beds for the reception of the spring bedding must shortly be undertaken. Notwithstanding the fact that the present occupants are so fine just now, and that they will probably remain presentable for some time, it is necessary to get their successors planted and established before inclement weather comes. The ground must be well cleaned of rubbish, dug thoroughly, and receive a liberal addition of well-decayed manure. Endeavour to do this work when the weather is fine, as it can then be carried out more expeditiously and cleanly. Avoid damaging the walks or turf in the neighbourhood of the beds. The plants of the various spring-flowering subjects have grown well, and their removal should be carried out with as little check to them as possible. Such plants as Wallflower in variety, Myosotis, Arabis, Polyanthus, Silene, and Anemone should be lifted with a small handfork, and carefully transferred to the beds. In very cold localities, it is customary, and of advantage, to mulch the beds with cocoanut fibre. Where Tulips and other bulbs are employed in conjunction with the plants already named, they should be planted at once, by means of a dibber. In places where game is preserved, hares and pheasants do a great amount of harm in the garden in severe weather, pheasants being very fond of Crocus and other bulbs, and scratching a good depth to find them.

General remarks.—Violas are now producing plenty of cuttings, and, if thought necessary, a further supply may be rooted in a shallow layer of fine soil in a cold frame. Fallen leaves must be swept up continuously: it is much easier to remove them when freshly fallen, and the constant brushing of the lawns stimulates the growth of the grass. The fallen leaves provide excellent material, when rotted, for many purposes.

FRUITS UNDER GLASS.

By B. GOODACRE, Gardener to Sir ERNEST CASSEL,
G.C.B., Moulton Paddocks, Newmarket.

Strawberries.—The plants in pots intended for forcing next spring may now be stood in cold frames until required. A sprinkling of soot on the floor of the frame acts as a check to worms. Place the pots closely together, packing them up to their rims with leaves. The lights may be left off until heavy rains prevail or frosts threaten. Ventilate the frames freely except during frosty weather. See that the glass is clean and sound, so that the plants may obtain the maximum amount of light, and not be injured by "drip."

Cucumbers.—The later batches of plants will, with proper treatment, continue to produce a few fruits for a time, and will spare the young plants grown for a winter supply from fruiting before it is absolutely necessary. Cucumbers require skilful treatment in order to yield a regular supply throughout the winter. Overcropping must be avoided, and the growths thinned and stopped regularly, distributing the shoots thinly and evenly over the trellis. Cut the fruits whenever they attain to a fair size, so as not to overtax the plants. Pay strict attention to the temperature of the house and such routine work as watering, ventilating, and damping. A night temperature of 70 degrees, with a proportionate increase by day is suitable. Admit fresh air, whenever possible, for an hour or two in the early part of the day, closing the ventilators about 1 p.m., at the same time giving a gentle syringing with tepid water. See that the plants do not suffer from lack of moisture at the roots. Such stimulants as liquid manure are best discontinued for the present, as they promote a rank growth. Nourishment is best supplied by light top-dressings of fibrous loam, to which has been added a little peat, some fertilizer, and a small proportion of well-sweetened horse-droppings. Keep a sharp look-out for red spider, which is sure to appear sooner or later, and take prompt measures for its destruction. Sponging with a solution of soft soap is the safest measure to adopt.

THE KITCHEN GARDEN.

By JOHN DUNN, Kitchen Garden Foreman,
Royal Gardens, Windsor.

Preparations for trenching.—Advantage should be taken of dry weather to convey manure to vacant plots in readiness for trenching, which should be commenced as early in the season as circumstances will permit. The heaviest and worst land should be trenched first, in order that it may be exposed to the influence of the weather for as long a period as possible. As land is only trenched occasionally, liberal supplies of farmyard manure should be incorporated whenever it is done. It may be considered an expensive operation, compared with digging, but it will repay any cultivator to trench as much of his land each season as possible.

Cabbage.—Cabbages planted a month ago should have the soil stirred, and any plants that have failed replaced. Another planting may yet be made for late spring supplies; the roots should be placed tightly in the ground, and a liberal watering given. Dust the foliage frequently with soot to keep slugs and other pests in check. If any plants remain in the seed-bed they should be transplanted into beds 4 feet wide, allowing 4 inches between the plants. Treated in this manner, they will provide a stock of plants for putting out in March.

Cauliflower.—Plants raised from seeds sown a month ago for spring planting should now be ready for potting into large "60" pots. They should be potted tightly, using turfy loam. Place them afterwards in cold pits on beds of ashes which should not be more than 18 inches from the glass. The lights may be kept in position and the plants shaded for a few days after potting, but when growth commences they should be removed, and the plants exposed fully to sun and air until the approach of frost, when the glass covering should be replaced at night. The lights should be removed on mild days throughout the winter to keep the plants from becoming drawn. Care should be taken that the plants do not suffer from want of water at the roots during the winter or disappointment is almost sure to follow. Cauliflower plants may also be pricked and transplanted into beds in cold pits for the winter. Allow a distance of 6 inches between the plants each way. The soil should not be too rich

or the plants will be liable to grow too freely, and, when planting time arrives, suffer a severe check in consequence. We grow 7,000 plants of these Cauliflowers at Frogmore, and nearly all are in large "60" pots; they are planted in the first week of April, and cutting commences at about the first of June.

Endive.—This salad may be planted in cold pits to afford supplies through the spring months. If plenty of light and air are afforded very little difficulty should be experienced in keeping these plants in good condition through the winter. The greatest danger is from damping, and may be guarded against by giving an abundance of air whenever the weather is favourable. Endive plants which have attained to their full size in the open garden should be tied up for blanching when they are perfectly dry. If slugs are troublesome amongst salad plants they may be destroyed by dusting the whole surface of the bed with hot lime in the early morning.

Parsley.—Plants growing in pits for winter supplies should have the leaves picked closely now in order to encourage fresh growth before the season is too far advanced. It is a mistake to allow the leaves to become crowded at this season, even if not required for use. The same remark applies to Parsley in the open garden which may have become overgrown, although leaves were gathered a few weeks ago.

Leeks and Onions.—Late plantations of Leeks should be watered freely with liquid manure to keep them growing freely as late in the autumn as possible. Hoe deeply between the rows as soon as the soil becomes workable after watering. Small sowings of Onions may be made in boxes every 10 days and placed in a cold pit for use as green salad during winter. Chives may also be grown in slightly heated pits for the same purpose.

Rhubarb.—Roots may be lifted as soon as the foliage has died down, and placed under a wall, simply covering them with mats to prevent the wind from drying them unduly. This will give the roots a check, which is necessary, as Rhubarb is not forced easily at this season.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir TREVOR LAWRENCE,
Bart., Burford, Surrey.

East Indian House.—Much of the time will now be taken up in repotting many of the cool Orchids, but there are other plants which should not be neglected. On looking through the warmth-loving Cypripediums, it will probably be found that some of these plants which flowered during the summer months are making considerable growth. Some may be in a pot-bound condition, and, if this is the case with any of the stronger-growing varieties, they will soon lose their older foliage if more root-room is not allowed them. Such plants should be repotted as soon as possible. Cypripediums grow quickly, therefore it is advisable to put them into pots at least two sizes larger than those they now occupy. Particulars as to a suitable compost for Cypripediums and directions as to repotting were given in a former Calendar (see p. —). Arrange the plants on that side of the house where there is the least sunshine, but where they will be exposed to the light, and maintain a moist atmosphere around them. Plenty of water at the root is necessary when the plants are growing freely. Such plants as *C. Stonei*, *C. Rothschildianum*, and other species of similar habit do not like repotting, especially when their roots have to be disturbed, therefore, if such plants have sufficient root space, and the soil is still in good condition, they may be top-dressed. Remove any portion of the compost which has become sour and replace this with fresh material. The *Dendrobiums* should be examined several times each week and any plants which have finished growing should be removed to a drier and more freely-ventilated atmosphere.

Cattleya House.—In this house such plants as *Vanda Kimballiana* and the rare *V. Watsonii* are developing their flower-spikes. Until the flowers open, the Sphagnum-moss on the surface of the compost should be kept moist and in a growing condition, but after the flower-spikes are cut very little water is needed to keep the terete leaves plump. *V. tricolor*, *V. suavis*, and others of that section which have lost some of their lower leaves, and will need repotting a few weeks hence, should have the water supply lessened gradually until that time, the plants

being more easily managed when the moss is somewhat dry.

Intermediate House.—Strong, healthy plants of *Cymbidium Tracyanum*, *C. Lowianum*, *C. eburneo-Lowianum*, and the reverse cross *C. Lowio-eburneum* now showing their flower-spikes should be afforded plenty of water at the root, and the others should be kept rather dry at the root for several weeks longer, otherwise growth will commence and the plants fail to bloom. Many of the cooler-growing Cypripediums, as *C. Spicerianum*, *C. Charlesworthii*, *C. Fairieanum*, *C. Leeanum*, *C. insigne*, and its varieties, are showing their flower-spikes. Those of *C. Leeanum* and *C. insigne* should be guided carefully through the foliage and tied to small, neat sticks. *Cœlogyne cristata* and its varieties should be encouraged to finish up strong-flowering bulbs by affording the plants abundance of root moisture till the flower-spikes show, and occasional applications of weak cow-manure water. Keep the plants near to the roof glass, so that they may dry quickly and need frequent waterings. Examine closely the undersides of the leaves for small, brown scale insects, as it is much more easy to do such work now than when the spikes are developing or when the blooms open. The rare *C. Veitchii* has just passed out of flower. For several years this plant has been difficult to manage, but after potting it firmly in well-drained *Osmunda* fibre and Sphagnum-moss, and keeping it well supplied with water, no further trouble has been experienced. After various trials, the plant has grown best when placed in a moderately-shaded position in the *Cattleya* house.

Cool House.—In this house the plants preparing to bloom include several species of *Oncidium*, as *O. crispum*, *O. Forbesii*, *O. varicosum*, and *Odontoglossum Edwardii*. It is very easy for these plants to over-flower themselves, and afterwards to gradually dwindle away. To prevent this, the spikes should be removed as soon as all the flowers are open, but weakly plants should not be allowed to bloom at all. Plants of *Oncidium concolor* will now require less water at the root, while such *Odontoglossums* as *O. Rossii*, *O. Cervantesii*, *O. Humeanum*, *O. aspersum*, and *O. Galeottianum*, which are now growing freely, should be plentifully supplied with moisture. These remarks apply also to *Sophranitis grandiflora*. It is advisable to elevate plants of this species well up to the roof glass at the warmest end of the house.

THE APIARY.

By CHLORIS.

Seasonable hints.—No further feeding is necessary after this date. Most beekeepers will have succeeded in bringing up the stores to nearly 30 lbs. This will cause much economy in bee life next spring, because with plenty of food, there will be no need for the bees to search for nectar on cold and stormy days. The hives should be thoroughly overhauled, and the brood chamber reduced to six or eight frames by means of the division board. Good and dry quilts should be used which will exactly cover the brood chambers, so as to leave no gaping corners. Between the quilts, the heat of the hive may be increased by using a sheet of brown paper. It should be unnecessary to remark that the hives cannot be made too cosy. The entrances should be closed, so that only one bee may enter at a time, and if the entrance thus secured be zigzag, forming a "V," it will help to shut out the sunshine, and thus reduce the great temptation to the bees to take a cleansing flight on bright sunny, but otherwise cold days. When the bright light is reflected from the snow bees often venture out and suffer from the cold.

Painting.—Knowing that dysentery is caused by dampness, the beekeeper should see that the hives are painted without delay, if this important work has not already been done. The summer heat causes the wood to split, and all the openings should be stopped. This is best done with putty after the first coat of thin paint has been applied. In all cases before painting is begun the surface should be scraped well, all loose putty removed, and then the whole well sandpapered. By this means a good and lasting paint surface will be secured. The amateur painter makes one great mistake when performing what he imagines to be a simple operation, he puts on the paint too thickly, but does not work it sufficiently into the wood.

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Local News.—Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

APPOINTMENTS FOR THE ENSUING WEEK.

THURSDAY, OCTOBER 20—
Fruit Congress at Hexham (3 days).

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich—49.5°.

ACTUAL TEMPERATURES:—
LONDON.—Wednesday, October 12 (6 P.M.): Max. 55°; Min. 50°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, October 13, (10 A.M.): Bar. 30.2; Temp. 56°; Weather—Dull.

PROVINCES.—Wednesday, October 12: Max 53° Ireland E. coast; Min. 47° Yorkshire.

SALES FOR THE ENSUING WEEK.

MONDAY, TUESDAY, WEDNESDAY, THURSDAY, AND FRIDAY—
Dutch Bulbs, by Protheroe & Morris, at 67 & 68, Cheapside, E.C., at 10.30.

TUESDAY—
250,000 Rhododendrons and other Stock, at Matlock Moor Nursery, Matlock, by order of Mr. E. W. Richards, by Protheroe & Morris, at 12.

TUESDAY AND WEDNESDAY—
Sale of well-grown Nursery Stock, at the Shortlands Nurseries, Ash, Surrey, by order of Mr. H. Sleet, by Protheroe & Morris, at 12.

WEDNESDAY—
Palms and Plants, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 5.
Rare Cyrtipediums from the "West Point" collection of Orchids, by order of S. Gratrix, Esq., at the Coa Exchange, Manchester, by Protheroe & Morris, at 1.30.

THURSDAY AND FRIDAY—
Clearance Sale of Nursery Stock, at Woking Nurseries, Woking, by order of Messrs. Jackman & Son, by Protheroe & Morris, at 12.

FRIDAY—
Choice Established Orchids, at 67 & 68, Cheapside, E.C. by Protheroe & Morris, at 1.

Prices of
Nicotine
Preparations.

The value of nicotine preparations in destroying insect pests is universally recognised. The importance of keeping down insect pests is both realised by horticulturists and insisted on by the Board of Agriculture. Hence it would seem to be a natural conclusion that no accidental circumstance would be allowed to force up the price of a commodity of so much value as the Tobacco from which nicotine preparations are made; or that as soon as it was discovered that the price of the raw material had advanced to an almost prohibitive figure, our agricultural authorities would have taken effective steps to secure a reduction in the price.

The present position of affairs, however, with respect to nicotine and Tobacco preparations does not appear to warrant us assuming that such steps have been taken. In spite of the agitation carried on by the National Fruit Growers' Federation, nothing appears to have been done towards remedying the present grievous and unnecessary state of affairs. The problem to be solved by our authorities is a simple one. They have to safeguard the revenue derived from the heavy import duty on Tobacco, and, at the same time, to remit the duty on denatured Tobacco—that is, Tobacco rendered unsmokeable even by the most inveterate smoker.

The present position is too ridiculous to continue and leads to the same result as

would be produced were the Revenue officers to enter into a conspiracy with noxious insects to frustrate the efforts of horticulturists to exterminate the pests.

The problem is no new one. After many years, the commonsense advocacy by Mr. Haldane in the House of Commons put an end to a similar state of affairs with respect to alcohol. Till that time, the Revenue officials had exacted the uttermost farthing in the way of duty from all alcohol, whether it was to serve as a beverage or as a chemical reagent. Hence it was that those industries requiring the use of large quantities of alcohol began to go to Germany, where administrative ignorance of the kind tolerated in this country is not allowed. The difficulty of facilitating the use of such commodities of alcohol, whilst safeguarding the Revenue, is got over in the case of that substance by admitting the denatured article free of duty. In the case of alcohol, for example, France allows the addition of material which gives a bright green colour to the spirit and warns the user as well as protects the Revenue. What is wanted in order to remove anomalies such as the present price of nicotine preparations is some joint committee of officials of Board of Trade, Treasury and other departments, in order to watch that laws made with one object may not incidentally do damage in unsuspected directions. The remedy in the case of nicotine compounds is to admit denatured Tobacco free of duty, and if no system of denaturing Tobacco satisfies the requirements of the Revenue officers, it should be made worth some chemist's while to find one. A tax on Tobacco was not designed to serve as a bounty to noxious insects and must not longer be allowed to do so.

Monument
to
Mendel.

As was announced in our last issue, a monument to Gregor Mendel was unveiled on the 2nd inst. at Brünn, in Moravia, the great manufacturing town in which he lived and worked for so many years. For the following interesting account of the inaugural ceremony we are indebted to Professor Bateson, who was invited to attend as a representative of the Science of Genetics in this country.

The proposal to erect the memorial was made five years ago, the initiative being taken by Dr. N. von Iltis and various residents in Brünn, with the co-operation of Professor von Tschermak, one of the original re-discoverers of Mendel's work. The fund was chiefly subscribed in Austria, but contributions were also received from naturalists in most of the countries of the world, including a handsome donation from Mr. Andrew Carnegie. Formal invitations to attend the function had been sent to only a few of the foreign subscribers, as it was thought unlikely that many of them would be able to undertake the journey. Thus it was that the celebration was primarily local in character. Nevertheless, there was a fair attendance of scientific men of many nationalities including Messrs. Erwin Baur (Berlin), Cuboni (Rome), Hagedoorn (Paris), Lotsy (Haarlem), Nemec (Prague), Nilsson-Ehle (Svalöf), Przibram (Vienna), Rümker (Breslau), von Tschermak (Vienna), de Vilmorin (Paris), and W. Bateson (London). The

University of Vienna was officially represented by the Rector Magnificus, Professors Katschek, Groben and Wettstein, with a large contingent of the junior members of the zoological and botanical staffs. A special welcome was given to Drs. A. and F. Schindler, Mendel's nephews, and to Herr Johann Mendel, a collateral member of the family, and the only one now bearing the name.

An exhibition of relics of Mendel, which was held on the previous evening, included a small herbarium and many interesting objects, especially the, as yet, unpublished replies which he received from Nägeli to the well-known letters in which his discoveries were communicated. This important correspondence is soon to be printed. No hope is now entertained of any further discovery of manuscripts. It is known that Mendel gave a lecture on heredity in bees to the Brünn Society of Agriculturists, but it was not reported in their proceedings, and at Mendel's death the note-books were probably sold as waste-paper. Another remarkable exhibit was the manuscript record of sun-spots and meteorological events, minutely observed every day throughout a long period of years at a time when careful study of the sun's disc was still a novelty.

The celebrations of the following day began with a Mass in the ancient church of the Augustinian Cloister, of which Mendel was abbot. The company went next to view the little garden in which he had grown his plants, and the monastic buildings surrounding it. The monument standing in the square outside the convent was then unveiled. In Moravia, music is indigenous, and odes were superbly sung by two male choirs. Speeches in honour of Mendel and descriptive of his work were delivered by Prof. von Tschermak and others.

The statue is of marble, representing the famous investigator as a young monk standing beside a background of Peas and Beans, as if pausing in his work. Below is a tablet, bearing kneeling figures, male and female, with clasped hands, typifying human marriage and the application of Mendel's discovery to human affairs. The proceedings concluded with a banquet and further speeches, notably one from M. Philippe de Vilmorin, expressing the deep obligation which he, as a practical man, felt to the hero of the day, and emphasising the value of the Mendelian discoveries in their bearing on the practice of agriculture and horticulture.

FLOWERS IN SEASON.—Messrs. JOHN FORBES, LTD., Hawick, have forwarded varieties of their strain of Pentstemon, a flower which this firm has made a speciality. The spikes were in every case large, with bold, finely-coloured flowers. The varieties, with Messrs. FORBES' description of their colours, were as follow:—Lady Clementine Waring, scarlet with crimson throat; Prosperity, crimson-scarlet, throat veined with chocolate; Alix Michie, white, heavily suffused with rosy-lilac; Mrs. Michie, bright scarlet, throat white; Lady Violet Brassey, pale pink; Mrs. Oliver, rosy-scarlet; Colonel Seely, purple-crimson, with white throat; Alfonso, soft pink, margined with crimson; Orville Wright, carmine, and white throat spotted with crimson; Wilbur Wright, cinnamon, suffused with scarlet; Miss Lella Stewart Peter, rosy violet; and Jessie, white, slightly suffused with pink.

WISLEY-STUDENTS' DIPLOMA EXAMINATION, 1910.—The following particulars are sent by the Rev. W. WILKS, M.A., Secretary of the Royal Horticultural Society. The Wisley Diploma Examinations in 1910 were held in March and July for those students whose two-year courses of instruction terminated in these two months respectively. Mr. JOHN FRASER acted as external co-examiner with the Laboratory Director on each occasion in both principles and practice of horticulture. The sets of questions given in March and July, though different, were of equal difficulty. In addition to this examination, the merits of an essay on a horticultural subject and of botanical and entomological collections made, together with the powers of intelligent observations shown, are adjudicated upon in awarding the diploma. The collated results show the following order of merit, those taking the examination in March being distinguished by an asterisk:—1, H. F. CLOUGH; 2, J. W. McCAIG; 3, R. McK. ROBSON; 4, W. CARTWRIGHT; 5, L. C. DYER; 6, R. L. BRAZIER*; 7, A. F. LEVERETT*; 8, E. KRUMBHOLTZ*; 9, H. LANE. Two other students, failing to satisfy the ex-

Some workers escape the rash altogether; others are attacked once only; some individuals are so susceptible that they cannot touch the flowers. The most severe ill effects are felt when the skin of the hands is cut or abraded. Some varieties of the genus *Narcissus* are more powerfully irritant than others. The Daffodil known as *Campanelle* is the most irritant, followed by *Narcissus ornatus*, *N. gloriosa*, the Scilly White, and *N. Grand Monarque*; but all other kinds may produce the same effect. Messrs. BULLOCKS, who have examined the plant at the author's instance, have not been able to isolate the irritant substance. The expressed juice of the fresh plants, an alkalioid extracted from them, and the essential oil obtained from the essence and pomade of Jonquil, gave negative results when applied to the unbroken skin. The juice, and the tincture of fresh flowers, however, caused irritation when applied to a surface abraded with a needle, and the former was specially active in this respect. The actual cause of the action is not yet explained; it has been suggested that the raphides which occur plentifully in plants of the *N.O. Amaryllidaceæ* may play some part. The

dark-brown streaks on the stems. On cutting across the stem, the vascular tissues are seen to be of a brownish colour, and microscopic examination reveals the presence in the vessels of vast numbers of the bacterium. The fruit also becomes blotched, and the parts affected by the blotches finally collapse. The symptoms in the Potato are similar, and, in the later stages of the disease, the presence of the bacterium in the tubers is indicated by a brown ring some little distance from the outside of the tuber. Inasmuch as *Bacillus solanacearum* is distributed by insects, the most promising preventive measure would appear to be the use of a spray fluid which contains an insecticide, such as arsenate of lead.

FRUIT AND FLOWERS IN QUEENSLAND.—We have received the following note from the London correspondent of the *North Queensland Herald*:—Half an hour's stroll in the grounds of the Acclimatisation Society at Brisbane will secure an inspection, amongst others, of the following:—Strawberries, imported from England, France, the United States, and New Zealand, grow alongside of Pineapples which have come from Florida,



FIG. 118.—GROUP OF SCENTED-LEAVED PELARGONIUMS AS GROWN AT GUNNEYSBURY.

aminers, the diploma has not been awarded to them. The following recognitions have also been given:—The Student Demonstratorship mentioned in the syllabus has been offered to Mr. CLOUGH; the Sutton prize has been awarded to Messrs. J. W. McCAIG, R. McK. ROBSON, and W. CARTWRIGHT; the Nicholson prize of £2 2s. has been awarded to Mr. J. W. McCAIG for observations; the £5 offered by Mrs. G. F. WILSON for collections has been awarded as follows:—1, Mr. H. F. CLOUGH; 2, Mr. R. McK. ROBSON; 3, Mr. L. C. DYER; 4, a special prize for a collection of fungi to Mr. J. W. McCAIG.

"LILY RASH" AMONGST FLOWER PICKERS.

—Dr. DAVID WALSH has recently made an interesting communication to the *British Medical Journal* on the subject of the so-called "Lily rash" which attacks the flower pickers of the Scilly Isles, who have to handle immense quantities of Daffodils and Narcissi during the season of gathering the blooms. These are more or less subject to an irritating eruption on the hands and arms, and sometimes also on the face.

symptoms seem to be similar to those observed in many other cases of plant rashes; especially in the immunity of some individuals and the extreme susceptibility of others. *Pharmaceutical Journal and Pharmacist*.

BACTERIOSIS OF TOMATOS AND POTATOS.

This disease, of comparatively recent introduction into Great Britain, has been known for some time in America, where its nature and origin have been investigated by Dr. EDWIN F. SMITH. From a note in the *Journal of the Board of Agriculture* (XVII., No. 4, July, 1910), it appears that the disease has now become serious and endemic in at least two localities in England. The parasite (*Bacillus solanacearum*), which is responsible for the Bacteriosis, gains access to the stem at its tip, brought thither by insects, and, penetrating to the internal tissues of the plant through punctures made by insects, spreads downward through the stem. As the result of infection, the uppermost leaves wilt, curl, and turn yellow. Later, many small, scattered, blackish-brown blotches appear on the leaves, and long,

the West Indies, and Singapore; also Bowen Park seedling plants of both Pines and Strawberries. English and Himalayan Blackberries, stand within a stone's throw of Mangoes from Bombay and the Mauritius, and a Custard Apple from Brazil. On the margin of a large patch of tall Sugar canes, consisting mostly of Bowen Park, West Indian, and Demeraran selected seedlings, can be seen Rock and Musk Melons. The filling of one section of the grounds is suggestive of an extensive itinerary, owing to flourishing examples of the following plants coming under review:—Rhubarb from Siberia, English Apples and French Lavender, Spanish Chestnuts and Italian Olives, a Mulberry from Constantinople, Smyrna Figs, Persian and Soudanese Date Palms, Caffeia and Ricinis from Arabia, a hedge of Kai Apples from Cape Colony, Jackfruit and Tamarinds, Teak and the Toddy Palms from India, Cinnamon from Ceylon, and many East Indian plants, such as Zingiber and Rice; *Arenga saccharifera* from the Philippines, Tea from China, Central Asian Buckwheat and Japanese Persimmons, California Redwood,

Rondeletia and Monstera from Mexico, Limes from Tahiti, and Flax from New Zealand, with many plants from intervening portions of South America, including Cocaine, Tobacco, Guavas, and Tapioca; Granadillas, Logwood, Gutta-percha, and Mahogany from tropical and Central America, Allspice from the West Indies, and Pecan Nuts from Texas. A flower border in the same grounds contains Daisies and Hibiscus, Ranunculus, Snowflakes and Ipomoea Horsfalliae, Jonquils and Gardenias, Larkspurs and Poinsettias, Pelargoniums, Fuchsias, Hydrangeas, Wall-flowers, Sweet Peas, Dahlias, Freesias, Chrysanthemums, Hollyhocks and English Ivy, along with Azaleas, various Orchids and Allamandas. Without entering the shelter and glasshouses, in which it is usual to protect plants designed for the tropical north, such as Cocoa and Vanilla—and passing the packing shed, in which may be seen in the winter time such plants as Cherries and other stone fruits, destined for the elevated inland portions of Southern Queensland—one minute's stroll over a sward composed mainly of tropical Buffalo Grass and English Clover, leads to a pond, within which, flanked on one side by Burmese Bamboos, and on the other by a Weeping Willow, can be seen growing from seeds ripened in the open air, the British white Water Lily, culled originally in a tiny Welsh streamlet, and Victoria regia from the Amazon.

PHYLLOXERA.—We have received a communication from the Acting Trades Commissioner of the Union of South Africa, drawing attention to an extract from the South African Union Government Gazette of August 19, 1910. This extract refers to regulations for the prevention and spread of Phylloxera vestatrix amongst vines in the Province of the Cape of Good Hope. The regulations provide, *inter alia*, that when any trees, plants, tubers, roots, bulbs or other subterranean produce are intended for importation they shall be accompanied by a sworn declaration from the consigner that they contain no vines or portions of vines; that they have been passed as free from insect pests and disease by the Government examining officer at the port of entry; and that they are perfectly free from Phylloxera vestatrix. The introduction of Grapes into the division of Graff Reinet is prohibited.

HEXHAM FRUIT SHOW AND CONGRESS.—We may remind readers that the Four Northern Counties Fruit Show and Congress, of which particulars were given in the issue for July 2, p. 8, will open on Thursday next, October 20, and continue for three days. The prizes for fruit include four silver cups and four silver medals, besides gold and silver medals and certificates offered by the Royal Horticultural Society. The Congress proceedings will take place during the afternoon and evening of each day. There will also be demonstrations of spraying machines at work, and lectures on fruit bottling. The exhibition and congress will be visited by delegates appointed by the Royal Horticultural Society, the Royal Caledonian Horticultural Society, and the Scottish Horticultural Association. The general Secretary is Rev. J. BERNARD HALL, Dalston, Cumberland.

L.C.C. CHRYSANTHEMUMS IN THE PARKS.—The annual Chrysanthemum shows at the L.C.C. parks were opened to the public as follows:—Southwark Park, on October 8; Battersea Park, Brockwell Park, Finsbury Park, Victoria Park, Waterlow Park, all on October 15.

ARTIFICIAL MANURES AND MUSHROOM CULTIVATION.—Experiments carried on by Mr. GUFFROY, in France, point to the conclusion that the addition of phosphates to the manure used for Mushroom beds leads to a considerable increase in yield.

BOTANICAL EXPLORATION IN THE MALAY STATES.—The current number of the *Kew Bulletin* contains an interesting account of a journey made recently by Mr. H. W. RIDLEY, Director of the Botanic Gardens, Singapore, to the States of Kedah, Perlis, and Setul, in the North-west of the Malay Peninsula. The narrative, which is in the form of a letter from Mr. RIDLEY to Sir JOSEPH HOOKER, makes it clear that this region is of considerable botanical interest. The land of the north-west of the peninsula is generally flat, and is undoubtedly of modern formation, the limestone hills, which rise out of the flat plain, representing what, not so long ago, were islands in a shallow sea. At one period, the southern part of the States of Malay—all south of Kedah Peak—was cut off from the Siamese States by sea. The flora of the north-west differs markedly from that of the southern part of the Malay Peninsula, the limestone hills particularly having a characteristically homogeneous flora of plants, such as Cycas Siamensis, Impatiens mirabile, Dracena cordylinoides, Euphorbia trigona, Hapaline, Amorophallus hæmatospadix, and A. carnea, Calanthe rubens, Eulophia Keithii, and Chirita Viola. Mr. RIDLEY found Melaleuca Leucadendron growing as small forests in the damper places, fringing the outer edge of the tidal flora. Inasmuch as the plant is undoubtedly wild in these situations, the tradition that Melaleuca Leucadendron was introduced into the Malay Peninsula by the Dutch seems now to be disposed of finally. Many new plants were obtained, and the majority have, in Mr. RIDLEY's opinion, not Malayan, but Indian affinities. As the result of his exploration, Mr. RIDLEY concludes that the Malayan flora ceases about Gunong Terai, and that north thereof is a Siamese flora. It is to be hoped that Mr. RIDLEY will be able to give us soon a full account of his interesting collections.

PUBLICATIONS RECEIVED.—*Plant Life in Switzerland*, by E. A. Newell Arber. (London: John Murray, Albemarle Street, W.) Price 7s. 6d. net.—*Alpine Flowers and Rock Gardens*, by Walter F. Wright. (London: Headley Brothers.) Price 12s. 6d. net.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

SUMMER FLOWERS IN THE SOUTH-WEST.—Many plants were omitted from my last note (see p. 225), and a few of these may now be considered. The fine *Calceolaria integrifolia*, which is here one of the best of the summer-flowering shrubs, and will grow to a height of 6 feet, was a blaze of gold during July and held blossoms in diminished quantity throughout the autumn. Some writers state that the plant is too tender for the open garden, but specimens have survived 23° of frost. *Cimicifuga racemosa* was checked by shifting it from the other garden, and instead of the shoots being 8 feet high as last year, they only reached a height of 3 feet. *Cypella Herbertii* has flowered, but not so freely as in previous years, doubtless owing to the dull season in 1909. *Gladiolus Saundersii* has been superb and has increased greatly; a new variety named *superbus*, grown here for the first time, has larger flowers than the type. *Candollea tetrandra* is a pretty, small shrub, which has been covered with yellow blossoms for some weeks past. *Solanum aviculare*, with its large, deep purple, golden-centred flowers, is a handsome but tender shrub, and two specimens have been lost here from cold in the last six years. This spring, a self-sown seedling appeared; the plant is growing very rapidly, and is now more than 5 feet tall and as much through. The largest example known to me grew in Mr. Howard Fox's garden at Falmouth. The specimen was about 15 feet in height, but the plant was killed by the hard winter of four years ago. *Tricuspidaria lanceolata*, better known as *Crinodendron Hookeri*, bloomed splendidly, and flowers were also borne on the white-

flowered *T. dependens*, which is said to be a very shy bloomer. *Buddleia variabilis superba* is a great improvement on *B. v. Veitchiana* being deeper in colour, and the older variety will now be discarded. *Callistemon salignus* has been covered with its crimson bottle-brush flowers, but a young plant of *L. lanceolatus* has not yet flowered. *Eucomis pallidiflora* produced a flower-spike well over 2 feet in height; this species is a great improvement on *E. punctata*, the blossoms being white with the faintest tinge of green. *Bignonia speciosa* from Uruguay bore its long, trumpet-shaped, wide-mouthed lavender-coloured flowers against a south wall in a neighbouring garden, and a bush of *Crassula coccinea* has been bright with flower. Close to it is growing a specimen of *Celmisia coriacea*. Last year, there was a larger plant near by, which flowered well and then died. This year *C. incana* flowered, but I have been very unfortunate with my *Celmisias*, and have lost quite three-fourths of my stock. *Montbretia Prometheus*, of which two dozen plants were obtained this year, is a glorious plant, being by far the finest variety. A small plant of *Romneya Coulteri* endured the shift and has made good growth, but a fine specimen of the other Californian Tree Poppy, *Dendromecon rigidum*, never recovered from its removal. It has been replaced by a small plant of the same species, and this has already flowered. The Mexican *Inga pulcherrima*, a rare shrub, has produced its scarlet flowers against a south wall in a friend's garden, where the very scarce *Colquhonnia coccinea* has also bloomed. In August, *Cassia corymbosa* commenced its floral display, and is now a sheet of bright yellow. It will retain flowers until close upon Christmas. *Commelina cælestis* is a lovely plant in the morning when its bright Gentian-blue flowers are expanded, but these close soon after twelve o'clock, and in the afternoon the plant is unattractive. The white variety is also grown here, but it cannot compare for effect with the blue type. A large plant of *Dianthus Atkinsonii* has been a sheet of deep crimson colour and looks very healthy. Many appear to lose this plant, but here the flower heads are cut off directly they fade, so that the plant is not weakened by seed production. *Malvastrum lateritium* has been charming with its flesh-pink flowers marked within with a carmine bar, whilst *Sphæralcea Munroana*, formerly classed as a *Malvastrum*, has been smothered with its pale red blossoms. The Lion's Tail, *Leonotis Leonurus*, against a south-west wall, promises to be a superb sight in a short time. The first of its flower-shoots are already perfected, and as there are over 60 flower-bearing shoots, it should be a wonderful sight when in full bloom. The blossoms, which are a glowing orange-scarlet in colour, are developed in whorls one above the other, some shoots having six whorls, the largest of which measure 17 inches in circumference. The plant is a native of South Africa, and is tender. *Wyndham Fitzherbert*.

FRUITS AT BELSIZE COURT, HAMPSTEAD.—In the gardens of J. S. Bergheim, Esq., in north-west London (gr. Mr. H. A. Page), the fruit crops have been highly satisfactory for many years, but especially so this season. The crops of Peaches began to ripen on May 16, and the last fruits are still remaining. Fruit trees in pots have cropped heavily, and the vines have borne well. The main crop of Apples in the open ground is obtained from pyramids planted 12 years ago, but some have been planted recently, and the fruits on all can be gathered by a man standing on the ground. The heaviest trees and finest fruits were on Lord Derby, Loddington, Blenheim Pippin, Cox's Orange Pippin, Betty Geeson, Reinette du Canada, Worcester Pearmain, Cox's Pomona, Gascoyne's Scarlet, and The Queen. The trained Pears on the walls have fine fruits on the Beurré Bachelier, Doyenné du Comice, and other favourite varieties. *B.*

HORTICULTURE IN YORKSHIRE.—In your issue for October 8 a reference was made to an attempt now being made to form a horticultural society in Yorkshire. For the benefit of your readers who may like to attend, I may say that the meeting mentioned by Mr. Donoughue (see p. 266) is fixed for 3 p.m. In addition to the offer of £5 mentioned by your correspondent, I have also guarantees which will carry us over this meeting. *Percy Clapham (sec. pro tem.)*, Brookleigh Gardens, Calverley, Leeds.

SWEET PEAS.—Those who are not members of the National Sweet Pea Society are indebted to the journals which publish the annual lists of Sweet Peas which obtain its recognition; but there are some things in the lists difficult to understand, and to those whose knowledge of varieties is slight I should say that they are sometimes misleading. Thus, in cream, buff, and ivory, the variety Clara Curtis is noted as superior to Paradise Ivory. In another class, Mrs. Hugh Dickson than Constance Oliver; again, Masterpiece than Frank Dolby; once again, Elsie Herbert than Mrs. Townsend; Countess Spencer than Zarina; and Etta Dyke than Nora Unwin. Now it is obvious that, in each case, the two varieties are composed of distinct units, so distinct that they are all worth growing, if not by an exhibitor, at least by people who grow Peas for decorative purposes. It is to be remarked, too, that the name of a Sweet Pea does not always afford an indication of what it is. We see, let us say, Clara Curtis growing in many gardens in its own name, or one of its synonyms, and what a variety of form and size there is! What we do want to know about Clara Curtis is, who has the finest strain? Then, what a pity it is that so many inferior varieties are grown which displace others that ought to have a place in every garden. Gardeners ought to be aware that, in many instances, all the flaked flowers are valueless to them, and, generally, the maroons, and, in many instances, the John Ingman and Helen Lewis classes cannot be used with advantage on account of their colour. It is becoming more and more difficult to select colours in flowers to please people with refined tastes. Hence the value of a select list of the best varieties for home use. *R. P. B.*

THE CLASSIFICATION OF SWEET PEAS.—I am pleased to see that the committee of the N.S.P. Society have so far the courage of their convictions as to issue a list of desirable varieties, and to bracket any that are "too much alike." The man in the street has long been crying out about the immense number of names employed to distinguish varieties. This is, in my opinion, the bugbear of the whole business of Sweet Pea growing. Many people are so annoyed with the plethora of names they find when wading through catalogues that without some means of obtaining expert knowledge or information they give up selection, and simply grow a few sorts that they know cannot mislead them. I grew 40 new, or so-called new, varieties this season, and I am so disappointed at the result that I shall fill up the space in the future with some other flower—Roses for example. In the list of "too much alike" varieties published on p. 269, I find no fewer than 144 names—just a gross! How absurd it is for those responsible for the naming of the so-called varieties to think that the public are all so easily enticed to include even a modest few of those names issued! Fancy 10 names of maroon when one sort only is quite sufficient; then we have nine given of yellow and buff waved, with a further addition of six in the same colour section, but of the grandiflora type. For the expert with but limited means and space, the difficulty is to know what to leave out when making an annual selection, but what must the trouble be for the amateur with but a small amount of knowledge of the subject? *An Old Grower.*

POLLINATION OF SPENCER SWEET PEAS.—The writer on this subject (see p. 257) states that it is probable that, in some of the "Spencer" forms, insect agency in fertilisation has to be reckoned with. I should say that the reason that some of the new type of Sweet Peas are very poor seeders is because the colour factors are unfavourable. I know of no colour of "Spencer" Sweet Pea that will not set seed as freely as any other annual plant in good summer weather, except Nancy Perkin, Earl Spencer, Tortoise-shell, and others of their shade in colour. It is merely because the Sweet Pea is so popular, and that seed is wanted in large quantities, that complaints are made. Bide's Orange King is, perhaps, the most beautiful of all orange shades; it is a small flower, and possesses a very clamped keel, but, like the Spencer forms of a slightly pale colour, its pollen is or would appear to be—of a sterile character. Yet, like many other flowers in different species that have been a long time

reaching these salmon-orange shades, after a few generations have elapsed, the seeding improves rapidly, and a normal stage is eventually reached. "Stirling Stent" is a case in point. The examination of a "Spencer" flower might easily lead anyone to suppose that the seeding would be poor, but my experience of "Spencer" Peas, grown under normal conditions, is that every colour, except those I have named, when grown in a sandy soil, will set more seed than the plants can ripen properly. During the past six years I have grown more than 18 hundred stocks of Sweet Peas, and made notes on them all several times during their flowering period. I have also grown some stocks that are credited with unfixed characters for four and five years in succession, and they still throw the same rogues as at first. I am no believer in any bee, beetle,



FIG. 119.—DRACÆNA VICTORIA AS GROWN AT KELSEY PARK GARDENS, BECKENHAM.

fly, moth, thrips or other insect agency being the cause of untrue stocks of "Spencer" Sweet Peas, and my chief point against the idea is that the varieties that are unfixed always throw the same colour rogue or rogues year after year, and anyone who grows large numbers of these flowers knows quite well what colour rogues will appear in them. Many "Spencers," when artificially pollinated, produce nothing but perfectly plain flowers in the F₁ generation, and it is, perhaps, to the credit of Sweet Pea raisers that the buyers receive very few plain types from their "Spencer" packets of English-grown Sweet Pea seeds. There are, of course, many "Spencer" Peas that come absolutely true year after year, although they may be grown quite near together; and, apart from that, as the number of the varieties is in-

creasing, so is the impurity of stocks decreasing. There are several English firms who would, I think, guarantee many of their stocks as being perfectly true, although the whole of them would be grown and seeded in the same field within a few feet of each other. Of course, if the Peas for seeding are grown in a closed garden, in quantity, near together, they will not set seed. Planted in a field where the wind can blow through them, the sticks have to be fairly strong to support the crop. I have reason to believe that Sweet Peas seed better when planted across the quarters from which the prevailing winds of the district blow; and if, as in the south, they are mostly south-west, or, in dry times, north-east, the rows should extend east and west. I have saved seed for raisers by request this year from crowded trials, but only in the outer rows was there a good yield. To get seed the flowers must dry quickly. But is it not the same with edible Peas and other garden flowers, or why the cry we all make when the sky is clouded and the flower-heads of choice annuals are daily damping-off for the want of a gentle breeze and golden sunshine? *Charles Foster, The "Times" Experimental Station, Sutton Green, near Guildford.*

DRACÆNA VICTORIA.—Although *D. Victoria* is similar in habit of growth to *D. Lindenii*, it is superior in its variegation. The whole leaf being bright golden yellow, with a central band of light green, ornamented with narrow streaks, varying in colour from greyish to creamy yellow, the golden yellow intensifying with age. This Brazilian plant was awarded a first-class certificate by the Royal Horticultural Society on October 25, 1898, and Messrs. William Bull & Sons distributed the stock in 1899. The plant illustrated in fig. 119 was propagated from a stem-cutting five years ago. The height of this plant, measuring from the top of the pot, is 9 feet, and when the specimen was photographed it bore 170 leaves, which averaged 2 feet long by 4½ inches wide. It has been grown in a compost of yellow loam with sufficient sand to keep it porous. In the early stages of growth it was given a slight bottom heat, subsequently plenty of heat and moisture, with light at all times, which is essential for obtaining the development of colour, avoiding overhead syringing in winter, as the water is apt to lodge in the axils of the leaves. The specimen is in a pot which has a diameter of 11 inches. The Beckenham Horticultural Society awarded the plant a silver-gilt medal on July 14, 1909. The Royal Horticultural Society, on July 19, 1910, gave a similar award to a group of plants, of which this was one. *Mark Webster (gr. to E. J. Preston, Esq.), Kelsey Park Gardens, Beckenham.*

THE MOOR HALL GRAPES.—Cultivators of experience when inspecting the illustration of these Grapes (see p. 258) would know quite well that they must have been given excellent cultivation. Lately, I have been disappointed with the general average of Madresfield Court Grapes to be seen, not at shows entirely, but in private gardens. I do not think this Grape is cultivated so well as it was a few years ago. Let it be understood I do not allude to show specimens that secure leading prizes, but many growers when staging their examples must surely realise how poor have been the result of their exertions. It must be admitted that when properly grown Madresfield Court Grape is unequalled for size of bunch, berry, and flavour. In the last respect seldom has it been beaten where prizes were offered for flavour, even by Muscat Hamburg. I saw the first bunches of this Grape, grown so successfully by the late Mr. J. Meredith, in the Garston Vineyard near Liverpool, and have always had them in my mind's eye as an ideal, but on several occasions I was able to emulate them quite easily. The two most important reasons for non-success with this Grape are over-cropping and a lack of really good foliage. Maturity of wood and leafage is an important factor with it; small, weakly leaves, which result from overcrowding, have an injurious effect upon the ultimate success. My contention is that one good leaf—fully developed by exposure—is of more use to the vine than half a dozen weakly, overcrowded examples. The berries of Black Hamburg are excellent; from their appearance one would say they are perfectly hammered, which in this variety is a sure sign of good culture. *E. Molyneux.*

CELSIA CRETICA AS A BEDDING PLANT.

The illustration of *Celsia cretica* at Sezincot (see p. 267) certainly seems to prove that it is an admirable plant for bedding, as it shows a symmetry and floriferousness desirable in such plants. But this character is not borne out by my experience of the plant. I grew it for several years in a garden in the south of Scotland, on a light soil and in a moist climate. In the first place, I purchased seed, sowed it under glass, and planted out the seedlings in the herbaceous borders. After the first time, I had always sufficient self-sown seedlings in borders that were mulched annually in the winter with a few inches of decayed hotbed materials. With me, the *Celsia* threw up one strong spike, which usually attained the height of 6 feet. As this spike lengthened and the lower flowers dropped, other lateral spikes were formed, and, as is well shown in the illustration, the inflorescence is centripetal, and, by the autumn, the main flower-spike, which had formed seed vessels and had only a few flowers left on the extreme axis, presented rather a grotesque and twisted appearance. *F. Street, Verdley Place Gardens, Sussex.*

—I would like to supplement the note on *Celsia cretica* (p. 267) by remarking that it need not be propagated in autumn, for splendid plants, which bloom right into winter, result from spring-raised seedlings. It should be understood that it is a somewhat coarse-growing plant. *C. Arcturus* is much to be preferred for garden decoration, and this, too, is best raised from spring-sown seeds. I have had it flower from seeds sown in the open; but it is preferable to raise it under glass. At the present time, I have a group of *C. croomandolina* in full flowers, some of the spikes 7 feet high, on plants flowering where sown. This is a handsome plant, and quite hardy, though Grimwood, the nurseryman who first distributed it, sold it as a stove plant. *C. pontica*, white-flowered, is also flowering on plants grown in the open, where sown; but it is less worthy of cultivation than the others. *R. P. Brotherston, Prestonkirk, N.B.*

SEEDLING POTATOS (see pp. 245, 267).—It may be that a variety which does well in Scotland will not succeed on the Wisley sand, just as it seems that a variety may be discarded for years in Scotland, and yet prove to be so good in the South as to merit an award. Potatoes vary wonderfully in diverse soils. Beyond awarding it three marks as a cropper, no further award is made to a Potato grown at Wisley until it has passed the cooking test. That is severe in the sense that some varieties come out very well on the Wisley sand. Some do not cook well; yet these may cook well from other soils. In this respect the cooking test may be too exacting. I have eaten tubers of King Edward VII. from diverse soils this winter, and found the quality to vary remarkably. The National Vegetable Society is content to give three marks only for crop and appearance, apart from the cooking qualities. *A. D.*

REGISTRATION OF FLORAL NOVELTIES.—I was pleased to read the note on page 266 on the registration of novelties by the Perpetual-flowering Carnation Society. As showing how necessary this is, I may instance the variety of Carnation named Queen Mary, described in "Flowers in Season," p. 265. A variety shown under this name by Messrs. W. Cutbush & Son gained an Award of Merit at the Royal Horticultural Society's meeting on June 11 (see p. 391). Messrs. W. Cutbush's flower was a very dark crimson border variety, whilst the other is a yellow-ground with red markings. Cannot the National Carnation Society take up this question of registration in the case of Border Carnations and thus put an end to such confusion of names. *S. J. B.*

ROSE FRAU KARL DRUSCHKI.—Your correspondent (see p. 267) has had trouble with this Rose owing to its making very strong growth. He has also found a remedy, namely, lifting the plants during early spring and pruning the strong roots. The way that I treat Frau Karl Druschki is to peg down the long shoots about April, with the result that they break at every bud, the growths are never much more than 15 or 18 inches, and the flowers are fit for exhibition and abundantly fragrant. For a bed of this Rose it is a very good plan to dot in a few plants of *Salvia splendens* or Fireball, which give a very pleasing effect. *W. McIntyre, Eltenmore, Dublin.*

THE LATE MAX LEICHTLIN.—As Mr. Elwes has pointed out in his sympathetic notice of the late Max Leichtlin (see p. 238), a selection from his correspondence would surely be of great interest, for Leichtlin was a generous letter writer, and what he wrote was always to the point; moreover, his quaint way of expressing himself in English added much to the charm and interest of his letters. Answering an enquiry as to how to manage the very beautiful but wayward Lily which bears his name, Leichtlin wrote in 1902:—"Lilium Leichtlinii requires a little more attention than her sisters, and does not bear potting, because it is her nature to strike out underground roots, which can only expand and grow and develop in perfect liberty. As she loves 'coolth' and not much dryness, one must take care that the soil in which she is planted gets only a little sun: on which account one plants her by preference in half-shady Rhododendron beds. With regard to the soil, good English sandy peat should be used, and take care that the water can drain off properly. In her fatherland she is found only in the woods, and even there but rarely: the earth in which you plant her must not be sieved, but torn into little pieces with the hands, and then the coarse and the fine used together." Again, in 1904, he wrote:—"A seed of *L. Philippense* had fallen aside, and having much space, grew so much as to flower in November, but the flower could not be fairly judged: it seems to want temperate-house treatment. We have very few Lilies which grow to flowering size within one year: now this same bulb I planted out in leaf-mould, and it sends up three stalks now (September) 4 feet high, the strongest being thumb's thick, and showing many hundreds of its elegant leaves and six buds of flowers. I wonder how it goes on when the weather becomes cooler: I judge it is not *Philippense* after all, but rather a new species." As a matter of fact, the Lily in question subsequently turned out to be *L. myriophyllum*, and Leichtlin raised and distributed a number of plants from this one seed. There seemed to be little in the cultivation of rare plants, and especially of Lilies, that Leichtlin did not know, and was not ready to share with others who were interested in the subject, and one never turned to him in vain for advice or assistance. Although of late years Leichtlin's income and the size of his hillside garden were reduced to such an extent as to preclude the cultivation of more than a few precious things, he remained constant to his love of Lilies, and when one visited him there was sure to be a pan or two of unknown Lily seedlings raised from seed sent to him by French missionaries either in Szechuen or Yunnan, Korea, or elsewhere, which he would insist on sharing with his visitor. *A. Grove.*

CARRION CROWS AND APPLES.—A few days ago I noticed some black carrion crows alight on a large tree of Blenheim Pippin Apple. Watching them for a few minutes, I was surprised to find them carrying away Apples, just as rooks do Walnuts. They repeated this till I had shot four birds, and I have not seen one near since. I have never before known carrion crows take away fruits of any description. *J. G. W., E. Barnet.*

SOCIETIES.

ROYAL HORTICULTURAL.

OCTOBER 11.—The Society's large hall was well filled with exhibits on the occasion of the fortnightly meeting on Tuesday last, the exhibition being one of the largest held this year. The principal subjects were border flowers, these being shown in large masses. There were also quantities of Dahlias, Chrysanthemums, Carnations, Roses, Begonias, Ferns, and greenhouse plants. But the two most important exhibits before the FLORAL COMMITTEE were displays of Bamboos and ornamental shrubs, a Gold Medal being awarded in each case. Many novelties were submitted for award, 10 receiving Awards of Merit.

Orchids were fairly numerous, and awards made to these plants included one First-class Certificate and four Awards of Merit.

The FRUIT AND VEGETABLE COMMITTEE made no award to a novelty, but they recommended a Gold Medal for a magnificent display of Apples.

At the three o'clock meeting in the lecture-room, an address on "Cider and Perry Fruits" was delivered by Mr. B. T. P. Barker, M.A.

Floral Committee.

Present: W. Marshall, Esq. (Chairman); and Messrs. Henry B. May, W. J. Bean, Chas. T. Drury, Jas. Walker, E. A. Bowles, John Green, Geo. Gordon, T. W. Turner, G. Reuthe, Jas. Douglas, W. H. Barr, J. F. McLeod, Walter T. Ware, H. J. Jones, Chas. Dixon, Chas. E. Pearson, Chas. E. Shea, J. T. Bennett-Poë, R. Hooper Pearson, W. P. Thomson, E. H. Jenkins, R. C. Notcutt, John Jennings, W. B. Cranfield, A. Kingsmill, and Herbert J. Cutbush.

MESSRS. JAMES VEITCH & SONS, LTD., Chelsea, showed a group of ornamental shrubs of great magnitude, requiring the whole of one side of the building for its display. Commoner subjects such as Box, Euonymus, Holly, Ivy, Phillyrea, Eleagnus, Aucuba, and Ligustrum were represented by choice forms, several having handsome variegation in the foliage. Especially striking was *Hedera Helix dentata marginata*, with silver foliage. There was also a form of *Griselinia littoralis* labelled *macrophylla*, the leaves being so much larger than the type as to bear no comparison. But the great importance of the display was found in the large number of new Chinese species, introduced by Mr. E. H. Wilson. Species of *Berberis* were especially numerous, most of them being in fruit. The berries of *B. Wilsonae* are like coral, giving the plant a fine appearance at this season. Others of note were *Stranvæsia undulata*, *Ligustrum Henryi*, *Berberis polyantha* (with sprays of coral-red berries), *Viburnum Henryi*, *Cotoneaster rugosa* Henryi, *Ilex Pernyi*, *Berberis brevipaniculata* (with dull-red berries), *Berberis Gagnepainii*, *Viburnum phlebotrachum* (with showy fruits), and *Arbutus procera* (with handsome leaves). This firm also filled a long table with greenhouse flowering plants, making a pretty exhibit. The beautiful hybrid *Begonias* were remarkably good, especially the carmine-rose-flowered *Elatior*, with semi-double flowers, produced in great bunches and possessing lasting qualities. The variety Mrs. Heal has larger flowers of similar shade, but they are single. *Streptocarpus* were good, also the showy, pink-flowered *Crowea saligna* and tall plants of *Plumbago*. *Impatiens Oliveri* flowers the whole year round. (Gold Medal.)

MESSRS. J. CHEAL & SONS, Crawley, Sussex, showed sprays of autumn-tinted foliage, relieved with vases of flowers. The following plants have all deeply-coloured leaves: *Rhus japonicus Osbeckii*, *Prunus persica folius atropurpureus*, *Acer virginicum fulgens*, *A. platanoides* Schwedleri, *Berberis Thunbergii*, *Corylus avellana aurea*, *Taxodium distichum*, *Liquidambar styraciflua*, *Cornus florida* (very effective), *Spiræa prunifolia*, *Acer Ginnala*, *Rhus typhina laciniata*, *Quercus rubra* (the king of Oaks), *Acer japonicum laciniatum*, and *A. dasycarpum tripartitum*. (Silver Flora Medal.)

MESSRS. W. PAUL & SON, Waltham Cross, showed *Crataegus Pyracantha Lelandii*, with pretty orange-red fruits brighter than the type; also baskets of Roses, such as Earl of Warwick, Corallina, Mme. Léon Pain, Pharos, and Margaret, all, with the exception of Corallina, being shades of pink. Interspersed amongst the *Crataegus* were silver-leaved *Ivies*, *Vitis purpurea*, *Prunus pissardii*, and *Cupressus macrocarpa lutea*. (Silver Flora Medal.)

MR. L. R. RUSSELL, Richmond, staged a collection of Bamboos that occupied a space of 75 feet by 9 feet, the group extending the whole width of the hall. There were more than 500 plants in 38 species and varieties. Many of the specimens were very large, some being 15 feet high. All the plants were in the best possible condition, and the arrangement was admirable. The more notable examples were *Arundinaria nitida*, *A. fastuosa*, *Phyllostachys rubicunda*, *P. aurea*, *P. nigræ*, *Bambusa Alphonse Karri* with golden stems, *B. quadrangularis*, *Phyllostachys Castillonis*, a golden-leaved form; *Thamnocalamus nana variegata*, the variegation being silvery stripes; *Bambusa gracilis*, the most graceful of all and a tall-growing species; *B. palmata*, the broadest-leaved of all Bamboos, but very dwarf; and *Arundinaria auricoma*, a mass of golden leaves that contrasted with the silver-leaved *A. Fortunei* variegata. In *Thamnocalamus Falconeri* the leaves hang in a drooping

manner like plumes. *Arundinaria Hindsii* is one of the darkest-leaved species, with grass like foliage. The variety *graminea* owes its name to this characteristic. (Gold Medal.)

Messrs. STUART LOW & CO., Bush Hill, Enfield, showed Carnations of remarkably fine quality and attractively staged. We noticed the fine new pink variety named *Lady Alington*; *Colossus*, cerise pink; *Marchioness Linlithgow*, white, very free in blooming; *Britannia*, one of the best of the scarlet kinds; *Beacon*, also a choice scarlet variety; and *J. Whitcomb Riley*, the best of the yellow shades, but with small flowers. Messrs. Low also showed *Roses*, flowering plants of *Clianthus Dampieri*, a batch of *Chironia exifera*, and a few *Cyclamens*. (Silver Banksian Medal.)

Messrs. H. B. MAY & SONS, The Nurseries, Edmonton, staged varieties of *Begonias* of the *Gloire de Lorraine* type. They were arranged in batches of pink and white-flowered sorts, including *Mrs. Leopold de Rothschild*, with flowers of a deeper tint than the type; also the fine, white *Turnford Hall* variety. With the *Begonias* were standard and dwarf plants of large-flowered *Veronicas* and batches of the handsome *Nephrolepis exaltata Marshallii*. (Silver Banksian Medal.)

A batch of *Gesnera Orange King* was shown by *Adeline Duchess of BEDFORD*, *Chenies* (gr. Mr. Dickson). The plants were well grown and carried good spikes of blooms. (Silver Banksian Medal.)

Messrs. J. HILL & SON, Lower Edmonton, set up a collection of *Gleichenias* in about 12 varieties and species, there being more than 200 plants. The largest specimen was a plant of *G. dichotoma*, one of the tallest growers, with elegant pectinate fronds; *G. Mendellii* has darker foliage than *G. dichotoma*, and with finer fronds. But the best in the group was *G. flabellata*, with a crown of pinnae at the end of a stout rachis, the fronds drooping from the centre like a plume of feathers. *G. semivestita* is a creeping species and dwarf growing. *G. spelunca* is one of the finer-leaved species, with slender growth. *G. dicarpa longipinnata* is most often met with in gardens, being easily grown and of very attractive appearance. *G. rupestris glaucescens* has a bluish grey under-surface to the leaves, and is very rare. (Silver-gilt Banksian Medal.)

Mr. C. ENGELMANN, Saffron Walden, Essex, filled a small table with varieties of perpetual-blooming Carnations, having good vases of popular sorts. *Rex*, a rather deeper pink shade than *Enchantress*, and very free blooming, and *Harlequin*, a yellow-ground *Fancy* with heavy red markings, are new sorts. (Silver Flora Medal.)

Messrs. B. R. CANT & SONS, Colchester, displayed *Roses*, including a pink seedling raised from *Frau Karl Druschki* named *Elizabeth*. (Silver Banksian Medal.)

HARDY FLOWERS.

Hon. VICARY GIBBS, Aldenham House, Elstree (gr. Mr. Ed. Beckett), showed *Michaelmas Daisies* as a floor group, having stands of different heights filled with huge posies of these showy autumn flowers. The method of grouping was a pleasing change from the usual system adopted at these meetings. The table was dispensed with, and the floor carpeted with green cloth, the stands being arranged on this. The outstanding variety was the large, blue-flowered *Climax*; others that were conspicuous for their attractiveness include *Damosel* (blue), *Day Dream*, *Star Shower*, *Sirius* (pink), *Silver Star*, *Desire* (a very effective white variety, the sprays being set with flowers like small *Daisies*), *Comeliness*, *Cinderella*, *Attraction*, *Rapture*, *Arcturus* (pink), and *Stella*. (Silver-gilt Flora Medal.)

Mr. H. J. JONES, Hither Green, Lewisham, also put up an imposing exhibit of border *Asters*, arranging the varieties with great taste. The more notable kinds were *Keston Blue*, *Moonstone* (bluish-grey), *Melpomene* (of the *novæ-angliæ* section, and having large pink flowers), *Climax* (one of the finest of all *Michaelmas Daisies*, the clear, blue flowers measuring 2 inches across), *Chastity* (white), *Lil Fardell* (one of the choicest of the pink varieties), *Porcelain* (of the shade of blue indicated by the name), and *Mrs. Raynor* (rosy-red). (Silver-gilt Banksian Medal.)

Mr. FRANK BRAZIER, Nurseryman, Caterham, staged a very attractive exhibit of *Michaelmas Daisies*, border *Chrysanthemums* and *Dahlias*. The flowers were displayed in bold bunches in

epergnes with autumn-tinted *Bracken*, *Sycamore*, and other subjects as relief. In the centre was an attractive stand of the fine *Scarlet Dahlia* named *Amos Perry* and, at the foot of this, small plants of *Salvia Horminum*, with deep blue bracts. The group was arranged with commendable skill. (Silver Flora Medal.)

Messrs. W. WELLS & Co., Merstham, Surrey, exhibited garden flowers in variety, also many *Chrysanthemums* some of these being large Japanese varieties. The more notable of the *Chrysanthemums* were *Mr. L. Thorn* (yellow), *Master James* (chestnut, with golden reverse), *Splendour* (apricot-buff), *Bryant Beauty* (silver-pink), *White Queen*, *Miss Alice Finch* (plum colour), and a large, white seedling. On another table this firm showed a new white *Carnation* of the perpetual-blooming type, named *White House*. It was raised in America, where it has become very popular. (Silver Flora Medal.)

Mr. JAMES BOX, Lindfield, Sussex, again staged a remarkably attractive display of hardy flowers, the various subjects being of good quality, and shown in large masses. In the centre was a fine mass of *Gladiolus America*, having soft pink flowers with carmine markings. Other interesting plants were *Cimicifuga simplex*, *C. cordifolia*, *C. japonica*, *Romneya Coulteri*, the new pink *Phlox Lindfield Beauty*, a pretty dwarf *Polyantha* *Rose* named *New Orleans*, spikes of *Delphiniums* and varieties of *Chrysanthemums*. At the back were tall epergnes filled with *Asters* and *Helianthus*, giving a fine effect to the exhibit. (Silver-gilt Flora Medal.)

Messrs. W. CUTBUSH & SON, Highgate, London, set up a large exhibit of perennial *Asters*, *Sunflowers*, *Rudbeckias*, *Pentstemons* and *Scabiosas*, with a dwarfier row in the front of *Penetia mucronata* in fruit, *Nerine Fothergillii*, *Aster lynosyris* and *Polygonum amplexicaule*. The *Asters* were arranged in great banks, the most effective being the pale-blue flowered *Climax*, one of the best of the race. There was also a good form of *Helianthus orgyalis*, and a clump of the soft pink *Newbury Gem* *Pentstemon*. Messrs. CUTBUSH also showed *Carnations* and greenhouse plants, both flowering and fruiting. *Ericas* provided a touch of colouring, and the bright berries of *Gaultheria procumbens*, *Skimmia japonica*, *Vaccinium Vitis Idæa* and small fruiting trees of *Oranges* appeared in contrast with such elegant-leaved plants as *Dracæna Bruantii variegata*, and *Phoenix Roebilini*, the latter a splendid subject for decorating dwelling rooms. (Silver Banksian Medal.)

Mr. MAURICE PRICHARD, Christchurch, Hampshire, exhibited an assortment of seasonable hardy flowers, varieties of *Asters* predominating. *Pyrethrum Hamlet* has very showy, rose coloured flowers with gold centres.

Messrs. JOHN PEED & SONS, West Norwood, arranged a long table with border flowers, *Alpines*, and succulent species, there being a good assortment of each.

Mr. N. F. ROBSON, Ham, Surrey, staged a large assortment of border *Chrysanthemums*, notable kinds being *Comtesse F. de Cariel* (bronze), *Goacher's Crimson*, *Horace Martin* (yellow), *Mrs. W. A. Hobbs* (pink), *Carrie* (yellow), *Holmes's White*, and *Elstob Yellow*. (Silver Banksian Medal.)

Mr. G. REUTHE, Keston, Kent, displayed an assortment of hardy perennials, *Nerines*, *Lilium sulphureum*, *Magnolia grandiflora*, *Morina longifolia*, *Helianthus orgyalis*, a dark form of *Polygonum polystachyum*, and the orange-red *Tropæolum tuberosum*.

Messrs. G. & A. CLARK, LTD., Dover, had some especially choice inflorescences of *Cimicifuga simplex* in a collection of other border flowers, the beautiful *Aster Climax* being equally as good. Plants of *Leonotis Leonurus* were well bloomed. (Bronze Flora Medal.)

The Misses HOPKINS, Shepperton, showed a small exhibit of border flowers, including *Alpines*.

DAHLIAS.

Messrs. T. S. WARE, LTD., Feltham, showed a large exhibit of *Dahlias*, arranged as a bank of flowers. The large *Pæony*-flowered variety *Souvenir de Gustave Douzon* is unsurpassed as a red variety in this section. The *Cactus*-flowered *Electric* has its yellow florets tipped with white. We also noticed a new double-flowered *Aster*, after the style of *Beauty of Colwall*, named *Peggy Ballard*. (Silver Banksian Medal.)

Messrs. BAKERS, LTD., Wolverhampton, showed *Dahlias* of the *Pæony*-flowered type, a

selection of the varieties including *Lady Norman* (salmon-pink), *Miss G. Keeling* (apricot-pink), *The Warrior* (crimson), *Lady Muriel Paget* (white), *Godsall Gem* (yellow), and *Mrs. W. E. Whineray*, one of the largest-flowered varieties, the florets being pink, suffused with apricot and buff. (Bronze Flora Medal.)

Messrs. CARTER, PAGE & Co., 52 and 53, London Wall, again showed *Dahlias* in great numbers, having varieties of the *Cactus*, *Pæony*-flowered, and single types, prettily arranged with grasses and other light foliage. (Silver Flora Medal.)

A small exhibit of *Dahlias* was made by Mr. J. T. WEST, Tower Hill, Brentwood, the varieties being all of the *Pæony*-flowered type.

Messrs. CHEAL also showed varieties of *Dahlias*, their singles being extra good, *Glencoe* (yellow), *Mikado* (gold, with a crimson centre), *Leander* (red, striped with maroon), *William Parrott* (red, tipped with white), *Lady Bountiful* (carmine and crimson), and *Kitty* (mauve-pink) being a selection. (Silver Banksian Medal.)

Mr. J. B. RIDING, Chingford, Essex, showed *Dahlias* in variety. Grand Duke *Alexis*, of the giant-flowered decorative type, has bold, white blooms with quilled florets; *La Colosse* is a fine red variety of this section. *Delice* (pink), *Yellow Colosse*, and *Papa Charmer* (crimson) are others of note. The remaining varieties were principally of the *Collarette* type.

AWARDS.

AWARDS OF MERIT were recommended to the following novelties:—

Aster cricoides "Perfection." This is a charming white variety of this popular type of *Michaelmas Daisy*. Shown by the Hon. VICARY GIBBS (gr. Mr. Edwin Beckett).

Carnation Scarlet Glow.—A perpetual-flowering variety of brighter and richer colour than any we have seen. Shown by Mr. G. LANGE, Hanworth Road, Hampton.

Carnation Shasta.—A perpetual flowering variety with white, much fringed petals, very fragrant. Shown by Mr. LANGE.

Carnation White House.—A first-class, white, perpetual-flowering variety. Shown by Messrs. WELLS.

Chrysanthemum Miss F. Collier.—This is a smooth, white flower of the Japanese type, suitable for market supply or general decorative purposes. Shown by Mr. W. T. ROOTS, Holly Cottage, Cranford.

Chrysanthemum "Cranfordia."—A variety of the same type as *Miss Collier*, but in colour very rich yellow. Shown by Mr. ROOTS.

Chrysanthemum Mary Poulton.—This is a very large Japanese flower, suitable for exhibition. The colour is an uncommon shade of silvery-mauve. Shown by Mr. HENRY POULTON, Huntley's Gardens, Tunbridge Wells.

Gesnera "Orange King."—This *Gesnera* was exhibited in numerous examples by *ADELIN* Duchess of BEDFORD, *Chenies* (gr. Mr. Dickson). It is a seedling variety raised in these gardens from mixed seed saved from *G. cinnabarina* and *G. exoniensis*. The leaves are mottled with dark green and red, and the flowers are bright orange-red, much richer and more attractive than those of *G. cinnabarina*. The plants exhibited were splendid specimens, and they were certainly calculated to stimulate interest in a class of plants that, in these days, has fallen into neglect. The effect of the group was most gratifying, the colour of the flowers being exceedingly attractive.

Ligustrum Henryi. This is a very distinct shrub, with erect, wiry growths and small, ovate leaves having the margins incurved. A Chinese species, exhibited by Messrs. JAS. VEITCH & SONS.

Symphoricarpos mollis.—Under this name, Messrs. JAS. VEITCH & SONS, exhibited a plant with very attractive white berries, similar to *S. occidentalis*, with which it may prove to be synonymous.

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the Chair); and Messrs. Jas. O'Brien (hon. sec.), Harry J. Veitch, Gurney Wilson, Henry Little, F. Sander, W. Bolton, R. G. Thwaites, Stuart Low, F. J. Hanbury, A. A. McBean, W. Cobb, J. Cypher, J. Charlesworth, C. H. Curtis, W. H.

Hatcher, W. P. Bound, H. G. Alexander, A. Dye, and Sir Jeremiah Colman, Bart.

R. G. THWAITES, Esq., Chessington, Christchurch Road, Streatham (gr. Mr. J. M. Black), was awarded a Silver Flora Medal for a group which was composed mainly of hybrids raised at Chessington, including a fine lot of *Cattleya* *Fabia* with several *C. Iris* and *C. Adula*; a selection of scarlet *Odontioda Bradshawia*, *O. Charlesworthii*, and other *Odontiodas*; three good examples of *Brasso-Cattleya* Mrs. J. Lee-mann, and a plant of the pure white *Lælia pumila alba*.

Messrs. CHARLESWORTH & Co., Haywards Heath, secured a Silver Flora Medal for an attractive group having in the centre a number of plants of *Epidendrum vitellinum*. Around them were a good selection of hybrid *Cattleyas* and *Lælio-Cattleyas*, those noted being *Cattleya Rhoda*, *C. Venus*, and the handsome new *C. Basil* (see Awards). Others of fine quality were *Lælio-Cattleya Golden Oriole*, *Pilumna nobilis alba*, various *Odontiodas*, the pure white *Lælia pumila alba*, the new and pretty *Polystachya paniculata* with two branched spikes of reddish-orange flowers, and the handsome *Odontoglossum Dora* of fine shape, white evenly blotched with purple and heavily tinged with purple at the back.

Messrs. STUART LOW & Co., Bush Hill Park, Enfield, were voted a Silver Flora Medal for a well-arranged group. At the back were some elegant sprays of *Oncidium varicosum*, *O. pulvinatum*, *O. tigrinum*, and other *Oncidiums* and *Odontoglossums*. *Cattleya Maggie Raphael*, *C. Fabia*, *C. Iris* and other *Cattleyas* and *Lælio-Cattleyas*; *Oncidium incurvum album*, *O. superbiens*, *Zygopetalum Maxillare*, the pink-tinted *Anguloa uniflora Turneri*, *Angræcum articulatum*, *Cirrhopetalum Roxburghii*, *C. appendiculatum*, *Bulbophyllum Dorei*, and other interesting species were included.

Messrs. SANDER & SONS, St. Albans, were awarded a Silver Flora Medal for an extensive group containing many rare hybrids and species. Among the hybrids was a very fine plant of *Bulbophyllum virescens*, also of *B. Medusæ*, *Anguloa uniflora*, *Brassia brachiata major*, *Dendrochilum latifolium*, &c., and of the hybrids noted were *Cattleya Parthenia Princess Clementine*, a white flower with purple veining on the lip; *C. Iris inversa* with richly-coloured flowers; *C. Adula*; *Lælio-Cattleya Walter Gott* (*L.-C. Bletchleyensis* × *C. bicolor*) with yellowish sepals and petals slightly veined with rose and showy, dark-reddish-violet lip; *L.-C. Wilsoniæ*, a large, dark flower on a very dwarf plant; several handsome *Odontoglossums*, *Brasso-Cattleya Thorntonii* and other *Brasso-Cattleyas*.

Messrs. J. CYPHER & SONS, Cheltenham, were awarded a Silver Flora Medal for a group having in the centre some well-flowered *Dendrobium Phalenopsis*. Beside them were some finely-coloured *Cattleya Mantinii*, two specimens of *Stanhopea eburnea*, the deep-scarlet *Odontioda Charlesworthii*, *Cypripedium triumphans*, *C. Milo* and other good *Cypripediums*; *Brassia Lawrenceana*, the clear-white *Camaridium ochroleucum*, and several good *Odontoglossums*.

Mr. E. V. LOW, Vale Bridge, Haywards Heath, secured a Silver Banksian Medal for a small but select group, which included the new *Cypripedium King George V.* (see Awards). With it were *C. Germaine Opoix*, *C. Niobe Westonbirt* var., *C. Leeana Corona*, *Cattleya labiata alba*, a pure white flower, and two forms with colour on the lip; *C. Thurgoodii*, *Oncidium incurvum album*, *Odontoglossum crispum Lady Jane*, and *O. grande aureum*.

Messrs. STANLEY & Co., Southgate, secured a Silver Banksian Medal for a group of *Cattleya Minucia*, *Lælio-Cattleya Walter Gott*, *Brasso-Cattleya Mme. Chas. Maron*, *Cynoches chlorochilon*, *Eria stellata*, &c.

Mrs. NORMAN COOKSON, Oakwood, Wylam (gr. Mr. H. J. Chapman), sent *Odontoglossum* × *Clive*, a very handsome hybrid with the greater part of the flowers reddish-claret. Also *Cypripedium Sibyl punctatum* (*Francisæ* × *Fairrieanum*), in which the petals are evenly spotted with purple.

Messrs. JAS VEITCH & SONS, King's Road, Chelsea, sent their new *Cypripedium* × *Pyrrha*, a showy, dark flower of unknown derivation, but the colours of *C. Baron Schröder*, and its fine substance and form are clearly distinguishable, although the flower of *C. Pyrrha* is much larger.

Lieut.-Col. Sir GEORGE L. HOLFORD, K.C.V.O. (gr. Mr. H. G. Alexander), sent *Lælio-Cattleya Arethusa* (*C. Harrisoniana* × *L.-C. exoniensis*) with a magnificent spike of ten flowers, and two others (see Awards).

Mons. FIRMIN LAMBEAU, Brussels, sent *Cypripedium Fairitsii* (*Fairrieanum* × *Curtisii*); an interesting cross.

Lady AUDLEY NEELD, Grittleton, Chippenham (gr. Mr. J. Pitts), sent a similar hybrid.

EDWARD ROBERTS, Esq., Park Lodge, Eltham (gr. Mr. W. Carr), showed *Cypripedium Venus* Park Lodge variety, a pure-white, wax-like flower with a few black dots on the dorsal sepal.

Mr. SIDNEY FLOREY, Tracey's Nursery, Twickenham, sent *Lycaste gigantea* Tracey's variety, imported from Peru. The plant is much more slender than the type. Sepals and petals dark green, lip reddish, fringed.

Mr. HARRY DIXON, Spencer Park Nursery, Wandsworth Common, showed *Odontoglossum Dixonæ* (*Edwardii* × *luteo-purpureum hystrix*), resembling *O. Thompsonii*, but with the larger spiny yellow crest of *O. luteo-purpureum*.

Mr. G. W. MILLER, Clarkson Nurseries, Wisbech, sent *Cattleya Lord Nelson* (*Harrisoniana* × *Mossiiæ* variety), a pretty rose-tinted flower.

Captain J. F. LAYCOCK, Wiseton, Bawtry, Notts., showed *Cattleya Adula* Laycock's variety, with bronzy-orange sepals and petals and mauve-crimson lip.

Sir WILLIAM MARRIOTT, Down House, Blandford (gr. Mr. Denny), sent as *Cattleya Peckaviensis* (*Aclandæ* × *Schilleriana*), a dwarf hybrid with rose-pink flowers spotted with purple and, in the opinion of the Committee, too small to be of the parentage named. Probably *Lælia longipes* was one of the parents.

Miss VIOLET FELLOWES, Shotesham Park, near Norwich (gr. Mr. Smith), sent *Cypripedium Charlesworthii* var. *Violet Fellowes*; of fine shape and with a broad, pale rose-tinted dorsal sepal.

AWARDS.

FIRST-CLASS CERTIFICATE.

Cypripedium King George V. × (parentage unknown), from Mr. E. V. Low, Vale Bridge, Haywards Heath.—A fine, bold flower, with some of the characters of *C. Gaston Bultel*. The broad dorsal sepal, which is perfectly flat, is green at the base, with dark lines changing to rose in the white upper part, which is also flushed with rose. The broad petals and lip are tinged with brownish-purple, and the whole flower quite distinct and florally perfect.

AWARDS OF MERIT.

Lælio-Cattleya Golden Oriole superba (*L.-C. Charlesworthii* × *C. Dowiana aurea*), from Lieut.-Col. Sir GEORGE L. HOLFORD, K.C.V.O. (gr. Mr. H. G. Alexander).—A very pretty hybrid, with sepals and petals of a clear canary-yellow colour with a trace of emerald-green. Lip rosy-crimson, with orange disc and golden-yellow veining covering all but the margin.

Lælio-Cattleya Ortrude magnifica (*L. anceps* × *C. Dowiana aurea*), from Lieut.-Col. Sir GEORGE L. HOLFORD, K.C.V.O.—A remarkable hybrid, with cream-white sepals and petals tinged and veined with rose-purple. Lip open, crimped, claret colour, with obscure gold veining.

Cattleya Basil (*Enid* × *Mantinii*), from Messrs. CHARLESWORTH & Co.—A complex hybrid, in which *C. Mossiæ*, *C. Warszewiczii*, *C. Dowiana aurea*, and *C. Bowringiana* have played a part. Sepals and petals purplish-rose, lip deep ruby-crimson. The colours are nearest to those of a good *C. Hardyana*, but the form is more like *C. labiata* in its best varieties.

Catasetum fimbriatum aureum, from J. GURNEY FOWLER, Esq., Glebelands, South Woodford (gr. Mr. J. Davis).—A very distinct form of this pretty aromatic species. The flowers are pale apple-green, slightly marked with rose, the whole of the centre of the fringed lip being deep golden-yellow.

Fruit and Vegetable Committee.

Present: Geo. Bunyard, Esq. (in the Chair); and Messrs. Jas. Cheal, John Harrison, Thos. Coomber, J. Willard, H. Parr, A. R. Allan, Chas. Foster, P. C. M. Veitch, Geo. Wythes, G. Reynolds, Owen Thomas, Geo. Kelf, Alex. Dean, C. G. A. Nix, H. Somers Rivers, Edwin Beckett, G. Hobday, W. Crump and P. D. Tuckett.

Several seedling Apples were sent for the opinion of the Committee. In the case of one variety, described as a late dessert sort, the sender was asked to submit specimens again later.

Mr. J. CROOK, Camberley, sent clusters of Runner Beans representing a selection from Hackwood Park Success, to show its productive-ness.

Mr. W. KNIGHT, Hailsham, showed a seedling autumn-fruiting *Rubus*, said to have been raised from the Raspberry crossed with the Loganberry. The fruits are of deep-red colour, and when fully ripe, fairly sweet. The plant is a heavy cropper. As a trial of autumn-fruiting Raspberries is now being conducted in the Society's gardens with a view to testing them next year, the raiser was asked to send specimens to Wisley.

The chief exhibit before the Committee was a superb collection of 150 dishes of Apples staged by Messrs. JAS. VEITCH & SONS, LTD., Chelsea. The quality and the general finish of the fruits were excellent. Amongst cooking varieties were Alfriston, Tyler's Kernel, Mère de Ménage, Lord Derby, Edward VII., Peasgood's Nonesuch, Withington Fillbasket, Golden Spire, Warner's King, Rev. W. Wilks (specially fine), Beauty of Kent, Annie Elizabeth, Bramley's Seedling, Bismarck, Sandringham, Royal Jubilee, and Winter Hawthornden. Of dessert varieties, the following were specially noticeable: Blenheim Pippin, Scarlet Pearmain, Court-pendû-plat, Fearn's Pippin, Golden Reinette, King of Tompkins County, Cockle Pippin, Rival, American Mother, Cox's Orange Pippin, Melon Apple, and Egremont Russet. (Gold Medal.)

The only exhibit of vegetables was one of Radishes, shown by the "TIMES" EXPERIMENTAL STATION, Sutton Green, Surrey (Mr. C. Foster, superintendent). There were 62 presumably diverse varieties, all in really remarkable condition, and presenting one of the most complete exhibits of these roots we have seen at a meeting. All the seeds were sown simultaneously in the open ground on September 3. (Silver Banksian Medal.)

THE LECTURE.

There was a good audience at the 3 o'clock meeting in the Lecture Room. Sir Albert Rolitt presided. Mr. B. T. B. Barker, of the National Fruit and Cider Institute, delivered an address on "Cider and Perry Fruits." Cider making, said Mr. Barker, was a far more important industry one hundred years ago than it is to-day, and the supply of Apples now available for the purpose is appreciably shorter than it was even 10 or 15 years ago. The orchards in the cider-making districts are mostly attached to farms, and very little attention is bestowed on the trees. No attempt has been made until recently to classify the best varieties of Apples for cider making, and in some orchards as many as 50 or even 100 distinct varieties are to be found. Varieties of cider Apples are characterised by their extreme hardness, their prolific cropping, and the small size of the fruits, which are generally very sweet. The trees are trained as standards, the land being grassed and employed for grazing. Generally, the trees have poor stems, which are unable to carry the great weight at the top, so that an orchard presents a very straggling appearance. A trial has been made, under the auspices of the National Fruit and Cider Institute, in growing cider Apples as dwarf trees grafted on the Paradise stock, and the Institute has distributed over six thousand trees, with the result that some 50 trial orchards of this description exist in the West of England.

With a view to discovering those varieties most suited for cider production, analyses have been made of the varieties, to ascertain the specific gravity of the juice, the amount of acidity, the quantity of tannin present, and the rate of fermentation of the juice. Varieties that have proved most satisfactory in these respects are Foxwhelp, No. 182 (a seedling), Kingston Black, Dymock Red, Sweet Alford, Morgan Sweet, Royal Wilding, and Médaille d'Or. Kingston Black is considered the best, as the quantity of acid and tannin present in this sort is moderate, whilst the amount of sugar is large, and the rate of fermentation low. It has been found that other factors besides these affect the quality of cider, and, in this respect, soil has a large influence. The same variety of Apple grown in one district

may give a good cider, but in another part it is inferior. Another factor in the quality of cider is the season, just as various vintages affect the quality of wine. Then, again, the degree of ripeness in the fruits has to be considered. Highly-coloured fruits, as a rule, make the best cider, and Apples from young, vigorously-growing trees are not so suitable as those from older specimens of the same variety. It is sometimes thought that when many varieties are mixed together a better cider results. This is true in a certain sense, because, when a large number of sorts are employed, the amount of sugar, acid, and tannin is more likely to approximate to an average quantity. But it is much better to use a single sort in which these qualities are known to exist. With regard to the financial side of the industry, Mr. Barker said that £20 per acre was a fair average return. The trees will live to 60 or 70 years, and many will produce 1½ tons of fruit each in a single season, a crop of half-a-ton from a single tree being common.

SCOTTISH HORTICULTURAL.

OCTOBER 4.—The monthly meeting of this association was held at 5, St. Andrew Square, Edinburgh, on this date. Mr. Whytock, the president, occupied the chair, and there was an attendance of 100 members.

Dr. Borthwick, Royal Botanic Gardens, Edinburgh, delivered a lecture on "Plant Diseases." It was only possible, he said, to study the nature of diseases and their causes when the minute structure of the healthy plant was understood, and we must be able to recognise and understand the import of the external or internal morphological and chemical changes which took place in diseased plants before we could adopt preventive or remedial measures. Increased cultivation of various crops, the more rapid transit and increased importation of plants, and the increasing tendency to cultivate the same kind or species of plant on large areas, had all tended to intensify the unhealthy or unfavourable conditions, and thus they were rendered more liable to attack. In 1901 the "Rust" in Wheat on the Continent of Europe involved a loss of £20,000,000, and in Australia the loss due to fungous disease in Cereal crops was about £2,500,000.

The paper for the meeting on November 1 will be on "The Working and Management of Garden Soils," by Mr. Geo. P. Berry, of the Edinburgh and East of Scotland College of Agriculture.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT. (ANNUAL DINNER.)

OCTOBER 6.—The 24th anniversary dinner of the society was held at the Hotel Waldorf, Aldwych, on this date. The chair was taken by Mr. Edward Sherwood, and he was supported by Dr. R. Boxall, Messrs. N. N. Sherwood, W. A. Bilney, Frank Hyams, W. Sherwood, G. Ingram, T. Bevan, J. Hudson, C. H. Curtis, W. P. Thompson, T. Winter, and others. After the loyal toasts had been observed, the chairman proposed "Continued Success to the United Horticultural Benefit and Provident Society." Mr. Sherwood said the society was not so well known by gardeners as it should be. It was distinctly a benefit society, and not a charity. Its funds amounted to nearly £30,000, and they were well invested. Such a society as this encouraged thrift, and was a provision against financial trouble during accident or sickness. The society was managed economically, and its various funds including benefit, management, convalescent, and benevolent, were all conducted in a satisfactory manner. He wished the society every success, and was pleased to submit his name for honorary membership.

Mr. C. H. Curtis, in response, thanked the chairman on behalf of the committee for presiding, and referred to the benevolent fund, which had proved of the greatest possible assistance to members when in adverse circumstances.

In proposing the toast of the "Honorary and Life Members," Mr. E. F. Hawes made special reference to Mr. N. N. Sherwood, who had founded the convalescent fund, and helped it every year with donations. Mr. N. N. Sherwood replied.

The toast of "The Visitors" was proposed by Mr. T. Winter, and Mr. E. Thomas responded.

The toast of "The Chairman" was given by Mr. W. A. Bilney, who referred to the good work which Mr. Sherwood and his family had rendered to this and similar gardening institutions. He also thanked him for providing the musical entertainment. This toast was received with musical honours.

A vote of thanks to the secretary, Mr. W. Collins, and the donors of fruit and flowers terminated a pleasant evening.

Obituary.

THOMAS HAMILTON.—A prominent market grower, Mr. Thos. Hamilton, of Waltham Cross, died on October 1. He settled at Cheshunt some 54 years ago, and began, on a comparatively small scale, the cultivation of Cucumbers, Grapes and Tomatos for the London markets. His business grew, and his several nurseries became of large dimensions, ranking at the time of his death amongst the largest producing these classes of fruit and vegetables. He was one of the pioneers in Cucumber culture for market, exporting produce to France, Germany and Russia. Mr. Hamilton was of Scotch origin, being a native of Edinburgh. He was a clever cultivator and



THE LATE THOMAS HAMILTON.

lover of plants, and never lost his liking for ornamental gardening. For some years he took an active part in local work, and was a member of the Urban District Council, in which capacity he took a great interest in the Cheshunt school gardens of the Herts. County Council, acting as judge. He was one of the founders of "The Hailstorm Insurance Company," being a director until his death. The esteem in which he was held was shown by the unusual signs of mourning that his neighbours at Waltham Cross exhibited on the day of his funeral. He was born on January 3, 1837. *George Paul.*

JOSEPH SPINK GRAY.—The death of Mr. J. S. Gray, for 51 years in the service of Messrs. Jas. Backhouse & Son, York, occurred at Richill, Co. Armagh, Ireland. For about two years in his youth he was employed in the office of Mr. Joseph Wilkinson, solicitor, York. From there he went to Messrs. J. Backhouse & Son, of the Holgate Nurseries, and from a humble station in the offices he rose to the position of manager. It is somewhat singular that Mr. Gray should have passed away so soon after the late Mr. Marshall, who was also with Messrs. Backhouse for about half a century. Mr. Gray will be remembered by

reason of his connection with the Grand Yorkshire Gala, having brought much practical horticultural knowledge to bear upon his duties as a member of the committee. Mrs. Gray pre-deceased her husband some 15 months ago.

WILLIAM STEWART.—We regret to record the death of Mr. William Stewart, which took place at Carlisle on the 8th inst. He was for many years head gardener to the late Sir Wilfrid Lawson, Bart., Brayton Hall, where he was much respected. He was a familiar figure at the leading horticultural shows, more particularly at the Caledonian Horticultural Society's shows in Edinburgh, where he gained many prizes. As a grower of stove plants he had few equals. About seven years ago Mr. Stewart opened a business in Carlisle as a florist and fruiterer, and his perseverance and tact enabled him to establish a business of good standing and wide connection. He leaves a widow and grown-up family.

DEBATING SOCIETIES.

WARGRAVE AND DISTRICT GARDENERS'.—The usual fortnightly meeting was held on Wednesday, September 28, in the Parish Room, Wargrave. A lecture was given by the hon. secretary (Mr. H. Coleby), on "Plant Hairs." The structure of these organs was described and diagrams were shown. The various functions they perform include, said Mr. Coleby, protection from unwelcome insect visitors, from heat, cold, the rain, and too rapid evaporation; assistance in the dispersion of fruit and seeds, aids to climbing or clinging, affording "footholds" for insects, and the secretion of various fluids.

SALISBURY GARDENERS'.—The annual meeting was held on October 5. The vice-president, Mr. A. C. Jenas, occupied the chair. The annual report showed that during the session 1909-10 the members had met 18 times, lectures being delivered on 10 occasions. The younger members were offered prizes for the best essays, and the reading of these formed the programme for one evening, whilst on another occasion a horticultural competition was held, the prizes being given by Mr. G. Locker-Lampson, M.P. A history class was started in November by the Salisbury Education Committee at the request of the society. The financial condition of the society is satisfactory, there being a credit balance of £165s. 3d. The secretary, Mr. E. W. Godrick, was congratulated and thanked for his efficient planning of the society's affairs on a sound basis. The resignation of 11 new members was proceeded with, and 15 were enrolled. A letter was read from the president, the Rev. Chancellor Bernard, regretting that he could not attend. Mr. Chittenden, the chairman, read a letter from Mr. Russell, Dr. Hutchinson, and Mr. Hall, in connection with soil sterilisation. The lecturer quoted the results he had obtained from experiments, and illustrated the effects of sterilisation of the soil as it influenced seedlings, by exhibiting a number of dried specimens. The explanation was given for the increased fertility of the soil after its treatment by heat, and the work of the living organisms in the soil was dealt with. Mr. Chittenden gave suggestions for sterilising soil by heat without the erection of an elaborate apparatus, and gave instances where sterilisation was carried out by market growers. Treating the soil with carbon bisulphide and formalin, for the destruction of soil pests, was also referred to.

CHELMSFORD AND DISTRICT GARDENERS'.—The opening meeting of the seventh session of the above society was held at the County Laboratories, Chelmsford, on October 7. About 60 members were present, and eight new members were elected. The subject for the evening was "Soil Sterilisation," by Mr. E. L. Chittenden, of the R.H.S. Wisley Laboratory. Mention was made in a lecture of the valuable work which has been done by Dr. Russell, Dr. Hutchinson, and Mr. Hall, in connection with soil sterilisation. The lecturer quoted the results he had obtained from experiments, and illustrated the effects of sterilisation of the soil as it influenced seedlings, by exhibiting a number of dried specimens. The explanation was given for the increased fertility of the soil after its treatment by heat, and the work of the living organisms in the soil was dealt with. Mr. Chittenden gave suggestions for sterilising soil by heat without the erection of an elaborate apparatus, and gave instances where sterilisation was carried out by market growers. Treating the soil with carbon bisulphide and formalin, for the destruction of soil pests, was also referred to.

GUILDFORD AND DISTRICT GARDENERS'.—Mr. H. Tamm presided at the meeting held on October 4, there being 47 members present. Mr. G. J. Nichols, of Merrow Grange gardens, read a paper on "Panicum nobile," and Mr. L. Pike, of Woodbridge House gardens, gave another paper on "Sweet Peas." A good discussion followed the reading of both essays.

CROYDON AND DISTRICT HORTICULTURAL.—There was a big attendance at the meeting held on October 4. The lecturer was Mr. Joseph Cheal, of the Lowfield Nurseries, Crawley, the subject of his lecture being "Old Gardens of Italy." Mr. Cheal's remarks were illustrated by lantern slides made from views obtained whilst touring in Italy a few years ago. Mr. Cheal said that the love of gardening in Italy dates from an early period. The climate being so clear and genial tropical plants and flowers luxuriate in the open, and the lecturer remarked that in walking through some of the gardens the perfumes from the flowers are almost overpowering. Statuary, urns and stone vases abound freely in Italian gardens, and Orange and Lemon trees grow in splendour. Lakes, cascades and fountains are brought into requisition to beautify the scenes and afford cool retreats in the hottest weather. Stone pergolas are largely employed, being clad with Roses, vines and other climbers. Lengthy terraces with parterres form conspicuous objects in the gardens. The Vatican gardens are divided into compartments with straight walks bordered by Box edging and rows of Orange and Lemon trees in pots. Successes have been designed their Papal arms in neatly trimmed Box.

MARKETS.

COVENT GARDEN, October 12.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in one day.—EDS.]

Cut Flowers, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Asters (Chinese), per dz. bunches	1 0	2 0	Marguerites, per dozen bunches	2 0	3 0
Camellias, per doz.	1 0	2 0	Orchids, Cattleya, per doz.	9 0	10 0
Carnations, p. doz. blooms, best			— Odontoglossum, per dozen blooms	2 6	3 0
— American varieties	2 0	3 0	Pelargoniums, show (white), p. doz. bunches	3 0	4 0
— smaller, per doz. bunches	6 0	9 0	— Zonal, double scarlet	2 0	3 0
Chrysanthemums, per dz. bunches	3 0	4 0	Roses, 12 blooms, Niphetos	0 9	1 0
— larger per doz. blooms	2 0	4 0	— Bridesmaid	0 6	0 9
Dahlias, per dozen bunches	2 0	2 6	— C. Testout	1 0	1 6
Gardenias, pr. doz.	2 0	3 0	— C. Mermet	0 9	1 0
Gladiolus, hybrids, per doz. spikes	2 0	3 0	— Liberty	0 9	1 0
Lapageria, white, per dozen	1 6	2 0	— Mme. Chateaufort	1 0	2 0
Lilium auratum, per bunch	1 6	2 6	— Richmond	0 6	1 0
— longiflorum	1 0	2 0	— The Bride	1 0	1 6
— lancifolium rubrum	1 0	1 6	— Various H.P.'s	0 6	1 0
— lancifolium album	1 0	1 6	Stocks, per dozen bunches	3 0	4 0
Lily of the Valley, p. dz. bunches	6 0	9 0	Tuberose, p. gross	3 0	4 0
— extra quality	10 0	15 0	— per doz. blooms	0 4	0 5
Marguerites, per dozen bunches	1 6	2 0	Violets, per doz. bunches	2 0	2 6
— white	1 6	2 0	— Parma, per bunch	1 6	2 0

Cut Foliage, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Adiantum cuneatum, doz. bchs	4 0	6 0	Ivy-leaves, bronze	2 0	2 6
Asparagus plumosus, long trails, per doz.	3 0	6 0	— long trails per bundle	1 0	1 6
— medium, doz. bunches	9 0	12 0	— short green, per dozen bunches	1 0	2 0
— Sprengeri	6 0	9 0	Moss, per gross	3 0	4 0
Croton leaves, per dozen bunches	9 0	12 0	Myrtle, dz. bchs. (English), small-leaved	4 0	6 0
Ferns, per dozen bchs. (English)	3 0	—	— French	1 0	1 6
— (French)	4 0	—	Physalis, per doz. bunches	2 0	3 0
Hardy foliage (various), per dozen bunches	3 0	5 0	Similax, per dozen trails	2 0	3 0

Plants in Pots, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Aralia Sieboldii, p. dozen	4 0	6 0	Ferns, in thumbs, per 100	8 0	12 0
— larger specimens	9 0	12 0	— in small and large 60's	12 0	20 0
— Mosses	6 0	8 0	— in 48's, per dozen	5 0	8 0
— larger plants	12 0	18 0	— choicer sorts	8 0	12 0
Araucaria excelsa, per dozen	12 0	30 0	— in 32's, per dozen	10 0	18 0
— large plants, each	3 6	5 0	Ficus elastica, per dozen	8 0	12 0
Asparagus plumosus nanus, dz.	9 0	12 0	— repens, per dozen	4 0	6 0
— Sprengeri	6 0	9 0	Grevilleas, per dozen	3 0	5 0
Aspidistras, p. dz., green	15 0	24 0	— in 48's, per dozen	3 0	5 0
— variegated	24 0	36 0	Isolepis, per dozen	3 0	4 0
Bouvardias, p. dz.	4 0	6 0	Kentia Belmoreana, per dozen	18 0	24 0
Campanulas, p. dz.	5 0	6 0	— Fosteriana, per dozen	18 0	30 0
Chrysanthemums from the open, per dozen	4 0	6 0	Latania borbonica, per dozen	15 0	21 0
— in pots	9 0	12 0	Lilium longiflorum, per dz.	12 0	15 0
Cocos Weddelliana, per dozen	18 0	30 0	Marguerites, white, per dozen	6 0	8 0
Crotons, per dozen	12 0	18 0	Pelargoniums, Zonal	3 0	4 0
Cyperus alternifolius, per doz.	5 0	6 0	Selaginellas, per dozen	4 0	6 0
— laxus, per doz.	4 0	5 0	Solanums, per dozen	6 0	8 0
Erica gracilis, per doz.	9 0	12 0	Spiraea (pink), (white)	10 0	15 0
— gracilis nivalis	12 0	15 0		6 0	8 0
— hymenalis	12 0	24 0			
Euonymus, per dz., in pots	4 0	8 0			
— from the ground	3 0	6 0			

Fruit: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Apples (American), per barrel	14 0	—	Apples (English), Lord Derby, per bushel	4 6	—
— Baldwin	14 0	—	— Warner's King	5 6	—
— York Imperial	24 0	26 6	— Cox's, 4 bushel	4 0	10 0
— Albemarle	30 0	36 0	— Yellow Ingestre, 4 bushel	3 6	—
— (Nova Scotian), per barrel			— Worcester Pearmain, 4 bushel	3 0	—
— Gravestones	19 0	22 0	— Bismarcks, per bushel	4 0	5 0
— No. 2	16 6	18 0	— Lane's, bushel	4 6	5 0
— per case	11 6	—	— Bramley's, per bushel	4 6	5 0
— Wine Sop	10 6	12 6	— P. a good		
— Ribston Pippin	22 0	26 0	— Nonesuch, per bushel	6 0	—
— (Californian), Newtown Pippin, per case					
— 4 tiers	11 0	—			
— 4 1/2 tiers	10 0	—			

Fruit: Average Wholesale Prices (continued).

	s.d.	s.d.		s.d.	s.d.
Bananas, bunch:			Nuts, Cocoanuts		
— Doubles	10 0	—	(100)	10 0	14 0
— No. 1	9 0	—	— Walnuts, per doz. lbs.	5 6	6 0
— Extra	10 0	—	— (French), Grevilleas, bags	10 0	11 0
— Giant	12 0	14 0	— English Cobs per lb.	0 8	—
— Red coloured	4 0	5 6	Oranges—		
— Red Doubles	8 0	9 0	— Jamaica	11 0	13 0
— Loose, p. doz.	0 6	1 0	Peaches (Canadian), per case	7 0	—
Blackberries, per peck	3 0	—	Pears (Californian), per case		
Cranberries, 30 qts. per case	10 6	—	— Beurre Hardy	10 0	—
Figs, per dozen	1 6	2 0	— Glou. Morceau	10 6	—
— (Italian), boxes	0 8	1 6	— Winter Nels.	11 6	—
Grape Fruit, case:			— Beurre Magnifique	8 0	—
— 96's	—	—	— Doyenné du Comice	30 0	33 0
— 80's	—	—	— Bartlett	5 0	6 0
— 64's	10 0	12 0	— Keifers, case	7 3	7 6
— 54's	—	—	— per barrel	16 0	18 0
Grapes (English), per lb.			— (French), cases	3 0	3 6
— Alicante	0 6	1 0	— 36's	4 6	5 0
— Madresfield Court	1 0	1 6	— 48's	4 6	5 0
— Muscat of Alexandria	1 3	2 6	— 56's	8 0	10 0
— Canon Hall Muscat	2 6	4 0	— 64's	7 6	9 0
— Black Hambro	0 6	1 0	— 72's	7 6	9 0
— Maroc, per lb.	0 9	1 0	— 90's	7 0	8 0
— (Belgian)	0 9	1 0	— (English), Fertility, bushel	8 0	9 0
— Gros Colmar	0 8	1 3	— Jargonelle	7 0	8 0
— Black Alicante (Guernsey)	0 3	1 0	— (German), Calabash, 1/2 bushel	5 0	6 0
— Almeria (tinted), barrel	11 0	—	— (Dutch), stewing Molles, per 1/2 sieve	3 0	—
Lemons:			— per barrel	14 0	—
— Naples	23 0	40 0	Pineapples, each	2 3	3 6
— Murcia (30's)	20 0	40 0	— (Florida), per case, 30, 36	16 6	20 0
Mangoes (Jamaica), dozen	3 0	6 0	Plums (French), Royals, 1/2 sieve	6 0	8 0
Melons (English), 1/2 bushel	1 6	3 0	— (French), Blue	4 6	5 0
— (Guernsey)	1 0	2 6	— Italian, case	8 0	—
— (French), Cantaloupe, each	2 0	5 0	— Kelsey (Japan), case	7 0	7 6
— (Spanish), yellow, per case, 24's	6 0	7 6	— (Californian), Golden Drops per case	9 6	10 6
— 36's	8 0	9 0	Pomegranates, per case	12 0	—
— Bronze (24's)	8 0	8 6	— Quinces, per case:		
— extra large	10 0	—	— 30's	5 0	10 0
— Water	14 0	16 0	— 40's	—	—
Nuts, Almonds, p. bag	36 0	42 0			
— Brazils, new, per cwt	49 0	—			
— sorted	55 0	—			
— Barcelona, bag	32 0	34 0			

Vegetables: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Artichokes (Globe), per dozen	1 6	2 0	Marrows, per tally	6 0	7 0
Aubergines, doz.	1 6	2 0	— per box	3 6	—
Beans, Broad (French), per pad	2 6	3 6	Mint, p. doz. bchs.	2 0	—
— per packet	0 4	0 6	Mushrooms, p. lb.	1 0	1 2
— Scarlet Runners, p. bushel	2 0	3 0	— broilers	0 10	—
Beetroot, bushel	1 0	1 6	— outdoor	0 6	0 8
Cabbages, tally	4 0	5 0	Mustard and Cress, per dozen pun.	0 6	0 8
Carrots (English), dozen bunches	0 9	1 3	Onions, Dutch, bags	4 6	—
— cwt.	2 0	2 6	— Belgians, bags	4 0	4 3
— dirty	1 3	1 6	— New Spanish, case	5 6	6 6
— (French), per dozen bunches	4 0	5 0	— Schallots, lb.	0 1 1/2	—
Cauliflowers, hamper (24-30)	1 6	2 0	— sieving	2 0	2 6
— per doz. (large)	1 6	—	Parsley, pr. doz.	2 0	3 0
Celery, per dozen	8 0	12 0	Peas (French), per pad	4 6	5 0
Corn cobs (Indian corn)	1 3	1 6	Radishes (Eng.), p. doz. bunches	1 0	1 6
Cucumbers, pr. flat	3 0	4 0	Sprouts, 3 bushel	1 9	2 3
Endive, per dozen	0 6	0 9	— Stachys tuberosa, per lb.	0 4	0 5
Herbs (sweet), packets, per gross	7 0	—	Tomatoes—		
Horseradish, 12 bundles	12 0	14 0	— (English), per dozen lbs.	2 6	2 9
Lettuce (English), Cabbage, per bushel	0 6	1 0	— small selected	2 0	—
— hamper	2 0	—	— seconds	0 9	1 0
Cos, per box	1 6	2 0	— (Guernsey), per dozen lbs.	2 0	2 6
— (French), Cos, per dozen	1 6	2 0	Turnips, 12 bchs.	2 0	—

REMARKS.—The market is now well supplied with English Apples. A consignment of about 4,000 cases of Apples from Wenatchee arrived this week. The fruits were in a good condition and well graded. They were much appreciated by buyers. Good Pears are in demand. Grapes are a plentiful supply, and they are selling slowly, prices showing no advance on those of last week, with the exception of Muscat of Alexandria. Only a few Peaches are to be had. Blackberries show an improvement in colour, and they have advanced in price. Sloes are arriving in limited quantities from the north of Ireland. English Walnuts (Doubles) are a very limited supply. Cob Nuts are dearer. English Tomatoes are arriving in much larger quantities. A few boxes of Tomatoes from the Canary Islands reached the market this week. The vegetable market shows no improvement on last week's trading. E. H. R., Covent Garden, October 12, 1910.

New Potatoes.

	s.d.	s.d.		s.d.	s.d.
Kents—			Bedfords—		
British Queen	3 6	3 9	May Queen	2 9	3 0
Sharpe's Express	3 2	3 6	British Queen	3 0	3 3
Eclipse	3 0	3 3	Lincolns—		
Epicure	2 9	3 0	British Queen	3 6	3 9
May Queen	3 0	3 3	Up-to-Date	3 3	3 9
Bedfords—			Sharpe's Express	3 0	3 3
Eclipse	2 9	3 0	Epicure	2 6	2 9
Up-to-Date	3 0	3 3	Blacklands	2 6	2 9

REMARKS.—Prices are about the same as last week: there is a fair amount of trade, and consignments are equal to the demand. Edward J. Newborn, Covent Garden and St. Pancras, October 13, 1910.

COVENT GARDEN FLOWER MARKET.

Trade is very uncertain. I was offered fresh, medium-sized blooms of Chrysanthemums at 4s. per dozen bunches late this morning (Wednesday), and the larger specimen blooms were equally cheap. Dahlias are equally abundant. There has been a fair demand for these for the Harvest Festivals. Asters are past. Lilies of various sorts are well supplied, good blooms of L. longiflorum being offered at from 1s. 6d. to 2s. 6d. per bunch. Lily of the Valley is fairly well supplied, and may be purchased at moderate prices. Lapageria alba is cheap. Whilst good Chrysanthemums are plentiful, the values of other flowers are much depreciated. Violets are numerous, and the Parma kinds are sold for as low as 1s. per large bunch. Roses are abundant, and prices for these flowers vary considerably.

Cut foliage is well supplied. Oak, with bronze-leaved foliage, is now at its best condition, and various subjects have bright autumnal tints.

POT PLANTS.

There is not much variation from last week. Chrysanthemums are the leading feature. Ericas are very good, E. hymenalis being particularly well flowered, but there is not a ready sale for Heaths at present. Ferns of all sizes are seen in large quantities, and may be bought cheaply. Other foliage plants are also well supplied. Palms of good quality, particularly Kentias and Latantias, advance rather than depreciate in value. Cyperus alternifolius is not grown so extensively as formerly, and its value has advanced a little; for some purposes this is a most useful plant. Hardy shrubs are a feature on many stands. Solanums of good quality are well supplied. There is only a moderate demand for plants, and many remain unsold at the close of the market. A. H., Covent Garden, October 12, 1910.

THE WEATHER.

THE FOLLOWING SUMMARY RECORD of the weather throughout the British Islands, for the week ending October 8, is furnished from the Meteorological Office:—

GENERAL OBSERVATIONS.

The weather.—After heavy rain in the western and north-western districts on Sunday and some more moderate falls elsewhere the weather over the kingdom generally was fair to fine. Slight rain occurred, however, rather frequently in the extreme north of Scotland, and a little was experienced some time during the period in most other localities. Thunder and lightning occurred at some places in the east of England on Sunday, and aurora was observed at Aberdeen on the nights of Thursday and Saturday.

The temperature was above the average, the excess amounting to about 4° over a considerable portion of the country, and as much as 6° in England N.E. and Scotland E. The highest of the maxima were recorded on rather variable dates, and ranged from 74° in England E., above 70° over the eastern and central parts of Great Britain generally, and 70° in Ireland S. to 66° in Ireland N. The lowest of the minima, which were registered late in the week at most stations, varied from 32° in Scotland E. to 41° in England N.E. and Ireland S., and to 46° in the English Channel. The nights generally were very mild for the time of year. The lowest grass readings reported were 29° at West Linton, 30° at Crathes and Newton Rigg, 31° at Cockle Park (Morpeth) and Llangammarch Wells, and 32° at Sheffield and Armagh.

The rainfall was much less than the average. In England E. and S.E. the fall was less than 0.1 inch, and at some stations in the east of England the week was rainless. Falls of more than an inch were reported over a large area in Ireland and the south-west of Scotland on the 2nd, and also in the Isle of Man. At Douglas the measurement amounted to 1.6 inch.

The bright sunshine exceeded the average in Scotland N. and Ireland S. The percentage of the possible duration ranged from 52 in the English Channel and 49 in England N.E. to 31 in Scotland W. and Ireland S., to 28 in Ireland N., and to 24 in Scotland N.

THE WEATHER IN WEST HERTS.

Week ending October 12.

The third warm week in succession.—The recent spell of warm weather lasted nearly three weeks, during which there occurred only one unseasonably cold day, and but two cold nights. There has been during the past spring and summer no such long continuance of unseasonably warm weather, the longest being in May when there were 12 consecutive days and nights of unusual warmth for the time of year. The ground is now very warm, being 4° warmer at 2 feet deep, and 5° warmer at 1 foot deep, than is seasonable. Rain fell on two days of the past week, and to the aggregate depth of three-quarters of an inch, making this the wettest week since the end of August, or for six weeks. These rains re-started both percolation gauges. Through the bare-soil gauge there had previously been no measurable percolation since the middle of September, and with one exception none at all since the middle of July through the gauge on which short grass is growing. The sun shone on an average for three hours a day, which is about the average duration for the middle of October. Light airs and calms alone prevailed during the week. The mean amount of moisture in the air at 3 p.m. exceeded a seasonable quantity for that hour by 2 per cent. E. M., Berkhamsted, October 12, 1910.

TRADE NOTICE.

LEAMINGTON NURSERYMEN AND FLORISTS (LIMITED).

Notice has been filed of the appointment of J. H. and F. J. Whitlock, 9, Bank Street, Rugby, as receivers, on September 5, 1910, under powers contained in debentures dated December 3, 1909.

GARDENING APPOINTMENTS.

[Correspondents are requested to write the names of persons and places as legibly as possible. No charge is made for these announcements, but if a small contribution is sent, to be placed in our collecting box for the Gardeners' Orphan Fund, it will be thankfully received, and an acknowledgment made in these columns.]

- Mr. JOHN DICK, for the past 8 years Gardener to Colonel NAPIER, Gartur, Stirling, and previously Foreman at Castlemilk, Lockerbie, and Panshanger, Hertford, as Gardener to the Marquis of Breadalbane, K.G., Taymouth Castle Gardens, Kenmore, Perthshire.
- Mr. A. HATHER, previously Foreman in the Gardens at Perry Hall, Birmingham, and Thorpe Lubenham, Market Harborough, as Gardener to Miss BUTLER, The Ashlands, Billesdon, near Leicester.
- Mr. H. BLOXHAM, for 8 years Gardener to the late S. H. WARD, Esq., Nether Edge, Sheffield, as Gardener to W. TOZER, Esq., Tipton Edge, Fulwood, Sheffield.
- Mr. JOHN R. MORGAN, for 8 years General Foreman at Ballywalter Park, Co. Down, as Gardener to E. J. BEAUMONT NESBITT, Esq., Tubberdaly Castle, Edenderry, King's County, Ireland.
- Mr. JAMES MACDONALD, from Messrs. THOS. METHVEN & SONS, Edinburgh, and previously Foreman for 1½ years at Aberlour House, Banffshire, and for more than 2 years Foreman at Archerfield, Dirlerton, as Gardener to Sir A. H. SETON STEWART, Bart., of Touch House, Stirlingshire. (Thanks for 2s. for the R.G.O.F. box. —E.D.S.)
- Mr. JOHN D. ATKINSON, for the past 2½ years Gardener to Major ATHERLEY, Hampton Court, Leominster, Herefordshire, and previously 6 years Gardener to the late Viscount ASHROOKE, Castle Durrrow, Queen's Co., Ireland, as Gardener to Lord BERWICK, Attingham Park, Shrewsbury, Salop.
- Mr. H. T. BARNETT, for the past 2 years Gardener to F. M. GORHAM, Esq., Arnolds, Holmwood, Surrey, as Gardener to the same gentleman at Drove House, Singleton, Sussex.
- Mr. E. ALLAWAY, for the past 3 years Foreman at Wykeham Abbey, Yorkshire, and previously 2 years Foreman at Bessborough Park, Co. Kilkenny, as Gardener to Mrs. E. W. EVERITT, Sherbourne House, Leamington Spa.
- Mr. JAMES DEUCHARS, for the past 6½ years Gardener to the late Mr. ANDERSON RODGER, Glen Park, Port Glasgow, as Gardener to Mrs. JOHN GORDON, Kenmure Castle, New Galloway, N.B.
- Mr. ALEX. BEATON, for the past 3 years Foreman at Belvoir Park, Belfast, and previously at Cullen House, N.B., has been appointed Gardener to Captain REEVE, Leadenhall Hall, Lincoln.
- Mr. ARTHUR OUTLAW, for the past 6 years Inside Foreman at Eglinton Gardens, Kilwinning, as Gardener to Sir JAMES COATS, Auchendrane, Ayr.
- Mr. H. GRIMES, late Gardener to Sir HENRY MEREDYTH, Pipewell Hall, Northamptonshire, as Gardener and Bailiff to the Hon. H. BOURKE, Wootton Hall, near Ashbourne, Derbyshire. (Thanks for 1s. 6d. contributed to the R.G.O.F. box. —E.D.S.)
- Mr. F. FORWARD, for the past 3 years and 8 months General Foreman in the gardens, Hursley Park, Hampshire, as Gardener to Miss BARING, Durnast, Burley, Hampshire. (Thanks for 1s. contributed to the R.G.O.F. box. —E.D.S.)
- Mr. F. DIBBIN, as Gardener to DOUGLAS CROSSMAN, Esq., Grandsden Hall, Sandy, Bedfordshire.
- Mr. L. JONES, recently Outside Foreman at Waddesdon Manor, as Gardener to Col. The Hon. W. A. W. LAWSON, D.S.O., Staveley Lodge, Melton Mowbray.

CATALOGUES RECEIVED.

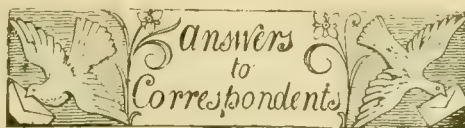
- CHARLES WARNER, Abbey Nurseries, Leicester—Plants.
- KING'S ACRE NURSERIES, LTD., Hereford—Fruit Trees and Roses.
- CHAS. W. BREADMORE, Winchester—Bulbs and Sweet Peas.
- ALEX. DICKSON & SONS, LTD., Newtownards, Co. Down—Roses.
- HAYWARD MATHIAS, Medstead, Hampshire—Carnations and Picotees.
- JOHN JEFFERIES & SONS, LTD., Cirencester—Roses and Fruit Trees.
- CLIBRANS, Altrincham—Fruit Trees and Roses.
- LIVERPOOL ORCHID AND NURSERY CO., LTD., Gateacre, Liverpool—Roses and Fruit Trees.
- JAMES VEITCH & SONS, LTD., Chelsea—Roses; Carnations; New Hardy Chinese Plants.
- FRANK CANT & CO., Colchester—Roses.
- BEES LTD., Liverpool—Roses; Fruit Trees; Shrubs; Alpines; &c.
- G. W. PIPER, Uckfield, Sussex—Roses.
- J. CHEAL & SONS, Lowfield Nurseries, Crawley, Sussex—Fruit Trees; Roses and Nursery Stock.
- W. J. UNWIN, Histon, Cambridgeshire—Sweet Peas.
- H. CANNELL & SONS, Swanley, Kent—Fruit trees and Nursery stock.

FOREIGN.

- HAAGE & SCHMIDT, Erfurt, Germany—Seeds.
- F. DELAUNEY, 100, Route des Ponts de Ce Angers—Fruits.
- GEMEN & BOURG, Luxembourg (Grand-Duchy)—Roses.
- DUCHESNE & LANTHOINE, Watermael lez Bruxelles—Orchids.
- PETER HENDERSON & CO., New York—Plants.
- J. FELBERY, Leclercq, Trier, France—Roses.
- F. C. HEINEMANN, Erfurt, Germany—Seed Novelties (Trade).

ENQUIRY

PRESERVING LEAVES ON SHOOTS OF BEECH AND POLYGONUM.—Can any reader inform me when is the best time to cut sprays of Beech and Polygonum, and what process, if any, should be adopted so that the leaves may be retained on the sprays for winter decoration? *Old Reader.*



APPLE SHOOTS DISEASED: *J. Halsey.* The Apple shoots are affected with the twig form of the fungus *Fusicladium dendriticum*, causing the "Black Spot" or Apple scab. Cut out as much as possible of this scabby wood, and spray the tree with bluestone and water (1 lb. dissolved in 25 gallons of water) at the beginning of February. This will also kill any moss or lichen that may be growing on the tree. Afterwards spray with Bordeaux Mixture (4 lbs. copper sulphate, bluestone, 4 lbs. quicklime, 50 gallons water) just before the flower-buds open, and again directly the fruit is set. If the variety is Cox's Orange Pippin, omit the second spraying. A full illustrated account of Apple scab on the leaves, wood, and fruit appeared in the *Journal of the Board of Agriculture* for June, 1903, price 3d.

AVERAGE YEARLY COST OF PAINTING GREENHOUSES: *B. P.* Assuming that the greenhouses described in your note require to be painted with two coats of good white or stone-coloured paint, and that breakages of glass have to be repaired with putty, the cost would approximately amount to £3 13s. made up as follows: ½ cwt. paint (ready mixed), 15s. 11d.; 1½ cwt. putty, 6s. 1d.; glass, 15s.; man, four days' painting, 24s.; one day making good glass and putty breakages, 6s.; one gallon American turpentine, 3s. 6d.; and one gallon linseed oil, 2s. 6d. We interpret the word "painting" as used in your note to apply to the making good of putty breakages (where top putty is used) before painting, but nothing is said about brickwork. If your greenhouses are given two coats of paint now, and they are painted again each year, the average annual expenditure in painting, &c., would be about £1 15s. 6d., if they are only painted one coat thick. But glass-houses are often painted but once in two years, and in this case the annual cost would then be only 18s. 6d.

CARNATIONS UNHEALTHY: *W. J. Vasey.* The Carnation leaves are just affected with the Carnation rust (*Puccinia arenaria*). Spray the plants with "liver of sulphur" solution (1 ounce of "liver of sulphur" dissolved in 3 gallons of water). Take care this spray does not fall on any white painted woodwork, as it will blacken it.

CREOSOTING GARDEN FRAMES: *J. E. C. L.* Fumes from creosote are injurious to plant life, and this method of preserving the woodwork should not be adopted. There have been instances where creosoted wood blocks used in road paving have injured plants growing adjacent to the roadway.

GRAPES NOT COLOURING: *Alicante.* The trouble is due to shanking. The most general cause of shanking is an unsatisfactory condition of the roots and border, but it may result from overcropping, excessive defoliation at one time, cold draughts, or any wrong treatment. During the coming winter, overhaul the border, placing the drainage materials afresh, and reconstructing the border. Afterwards, keep the roots under control by giving them occasional top-dressings.

GRAPES WITH BROWN MARKINGS: *C. A. Brinklar.* The brown spots on the Grapes do not appear to be caused by any fungus. Some mites are present.

IVY ON PAINTWORK: *Ivy.* If the paint is thoroughly dry and hard, it will have little effect on the growth of the Ivy. The plant may often be found clinging to the painted work of windows and eaves.

MARKET WEIGHTS AND MEASURES: *T. B. A.* The following weights are recognised in Covent Garden Market:—Apples: "Bushel" = 42 lb.; "pot" = 63 lb.; "case" = 40 lb.; "barrel" = 140 lb. Pears: "Case" = 20 lb. Beet: "Pot" = 70 lb. Brussels Sprouts: "Pot" = 40 lb.; "hamper" = 60 lb. Onions: "Dutch bags" = 110 lb., taken as 1 cwt.; "Valencia case" = 120 lb. Spinach: "Bushel" = 24 lb. Turnips: "Pot" = 60 lb. Potatoes: "Load" = 252 lb.; a "bag" of foreign Potatoes = 1 cwt.; "tally" of green vegetables = 60 heads.

MELON ROOTS WITH "WARTS": *P. J.* The trouble is due to eelworm. See reply to *Geo.* West in the last issue, p. 271.

NAMES OF FLOWERS, FRUITS, AND PLANTS.—We are anxious to oblige correspondents as far as we consistently can, but they must bear in mind that it is no part of our duty to our subscribers to name either flowers or fruits. Such work entails considerable outlay, both of time and money, and cannot be allowed to disorganise the preparations for the weekly issue, or to encroach upon time required for the conduct of the paper. Correspondents should never send more than six plants or fruits at one time: they should be very careful to pack and label them properly, to give every information as to the county the fruits are grown in, and to send ripe, or nearly ripe, specimens which show the character of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations. Correspondents not answered in one issue are requested to be so good as to consult the following numbers.

FRUITS: *S. Symonds.* King of the Pippins.—*Hackness.* 1, Sea Eagle; 2, Madame Trévy.—*O. A. C.* 1, Winter Colman; 2, Bastard Blenheim; 3, Winter Quoining; 4, Dumelow's Seedling (syn. Wellington); 5, Lemon Pippin; 6, 7, King of the Pippins; 8, Reinette de Caux; 9, Catshead.—*O. W. Hunt.* 6, Warner's King; the others are misshaped and small. We cannot undertake to name such poor specimens.—*M. Fritter.* The taller fruit is Smart's Prince Arthur, the other Hanwell Souring.—*S. Broadshaw.* 1, Minchull Crab; 2, Beurré d'Anjou; 3, Doyenné Grise; 4, Marie Benoist; 5, Beurré Diel; 6, Beurré Capiaumont; 7, Bergamotte Esperen; 8, Small's Admirable; 9, Marie Louise.—*J. H. Fig Brunswick.* We do not undertake to reply to these communications by post.—*Sweet William, Oxon.* Apple Court-pendû-plat.

PLANTS: *N. H. P.* Euonymus europæus, Spindle Tree.—*N. W. C.* You have far exceeded the proper number; a small contribution to the R.G.O.F. box would be appropriate. 2, *Aster acris*; 3, *A. ericoides*; 4, *A. multiflorus*; 5, *A. lævigatus densus*; 8, *A. ericoides*; 9, *A. acris*; 10, *A. cordifolius elegans*; 13, *A. "Robert Parker"*; 19, *A. puniceus pulcherrimus*; 20, *A. novæ-angliæ roseus*; 23, *A. patens*; 24, *A. novæ-belgiæ niveus*; 28, *A. Amellus*; 29, *A. novæ-belgiæ lævigatus*. Those of the intervening numbers are evidently all garden seedlings. The remainder next week.—*R. M.* 1, *Aster "Robert Parker"*; 2, *A. novæ-angliæ pulchellus*; 3, *A. novæ-belgiæ grandiflorus*; 4, *Chrysanthemum uliginosum*; 5, *Helianthus decapetalus*.—*Constant Reader.* 1, *Cotoneaster microphyllus*; 2, *Thuya occidentalis*; 3, *T. dolabrata variegata*; 4, *Muehlenbeckia varians*; 5, *Smilax* sp.; 6, *Euonymus japonica variegata*; 7, *Santolina Chamæcyparissus*; 8, *Rosmarinus officinalis*; 9, *Escallonia rubra*; 10, *Lychnis dioica* var.; 11, *Elaeagnus pungens variegata*.—*S. R. V.* *Quercus Lucombeana*; *Pyrus Forminalis*; *Tilia dasystyla* (syn. *euchlora*).—*G. G.* *Lucombe Oak*; *Quercus Lucombeana*.—*L. G. P.* *Aralia chinensis*.—*William S. Minty.* *Silene armeria*.—*J. Davis.* *Rose Tillier*.—*A. C. H.* *Cypripedium radicosum* (*Spicerianum* × *Lawrenceanum*). The divided and laterally extended lower sepals may be an occasional feature, or it may be fixed. It merely shows the true character of the lower segments, which are usually joined and arranged behind the lip.—*C. S. C.* *Allamanda Hendersonii grandiflora*; *Lathyrus sativus*, narrow-leaved variety.—*T. A. C.* *Sempervivum ciliatum*.—*T. P.* *Ceanothus thyrsiflorus Gloire de Versailles*, a garden-raised variety.—*Shrubs, Roskill.* 1, *Cotoneaster frigida*; 2, *Viburnum Opulus*. The Begonia leaves have been injured by excessive moisture; keep the plants drier, and afford plenty of ventilation.—*A. Z.* 1, *Oncidium oblongatum*; 2, *Ornithidium sophronitis*; 3, *Stelis Rodriguezii*; 4, *Celia Baueriana*; 5, *Zygopetalum nitidum*; 6, *Cypripedium venustum*.—*P. E. N.* *Stenoglottis longifolia*, a South African terrestrial Orchid. It is near to *Stenoglottis fimbriata*, but in the latter species the basal leaves are blotched with purple. There are no leaves with the small inflorescence you send.—*T. A. N.* *Newcastle*. *Saxifraga Fortunei*.—*W. E.* 1, *Acer polymorphum atropurpureum*; 2, *Acer polymorphum sanguineum*.—*W. J. W.* *Daphne Mezereum*.

PACKING FLOWERS FOR TRANSIT: *T. H. K.* Your plan of packing blooms for a journey in a single layer with damp moss at the bottom is a good one. But do not use too much moisture, as this will cause the flowers to deteriorate. Most flowers are sent to Covent Garden

market in shallow, wooden boxes with layers of soft tissue paper beneath and about the flowers to prevent damage by rubbing. In the case of Roses, Carnations and other big blooms with long stalks, a strip of wood is wedged tightly from side to side, securing the flowers so that they cannot shift.

turf with fine soil. In the spring, dress the grass with some nitrogenous manure, such as sulphate of ammonia. Plantains may be killed by placing common salt in the crowns, or by piercing the centres with a steel spike that has been dipped in a strong acid. Seedlings of this weed may be prevented by mowing the turf

ting, letting the bottom of the wire penetrate the soil several inches deep.

ROSES SUITABLE FOR FORCING: *A. H.* Twelve suitable Tea-scented Roses for pot culture are Niphetos, Sunrise, Mme. Falcot, Peace, Perle des Jardins, Robens, Catherine Mermet, The Bride, Bridesmaid, White Maman Cochet, Mme. Antoine Mari, and Lady Roberts. These are pure Tea-scented varieties, and their flowers give a wide range of colour. Six suitable Hybrid Tea varieties, which favour the Teas much more than the Hybrid Perpetuals, are Mrs. Aaron Ward, Le Progrès, Molly Shannon Crawford, Souvenir de Pierre Notting, Kaiserin Augusta Victoria, and Mrs. W. J. Grant. Of Hybrid Perpetuals, it will be best to confine your selection to dark-coloured varieties. General Jacqueminot, Fisher Holmes, Victor Hugo, Countess of Oxford, Prince C. de Rohan, and Commandant Felix Faure are all suitable; whilst the H. Teas, Richmond and Liberty should be included among the dark reds. Purchase the plants in pots, as these will be more satisfactory than newly-lifted specimens from the open.

SWEET PEAS TO FLOWER IN FEBRUARY AND MARCH: *E. G. F.* Sow the seeds at the end of October in a temperature of from 45° to 50°. Do not use more fire heat than is absolutely necessary, but ventilate the house freely both by day and night, whenever the weather will allow. The seeds are best sown in small pots, and allowed to germinate slowly, either in a cold frame or on shelves near the glass in quite a cool house. Take measures to protect the seeds from mice and rats.

THE WONDERBERRY: *Anxious.* You will find an account of this fruit, accompanied by illustrations, in the issue for October 30, 1909, p. 291.

TOMATOS FOR FRUITING IN MAY: *E. G. T.* See should be sown in the first week of November in a temperature of about 60°. The atmospheric temperature during the winter months should not be less than 55° or more than 65°. Afford the plants all the light possible, avoiding strictly a moist, stagnant atmosphere.

TREE TOMATO (see fig. 121): *A. U. S.* This fruit is *Cyphomandra betacea*, the Tomate de la Paz of Mexico and Central America. It is also known as the Tree Tomato and Vegetable Mercury in the West Indies for the real or supposed medicinal qualities of the fruits in relieving liver complaints. The species is distributed widely in tropical and temperate regions.

VINES FAILING TO CROP: *Constant Reader.* The roots of the vines appear to have got into very poor soil. The best thing to do is to renovate the border at once. Dig out a trench about 3 feet wide at the outside of the border, then gradually fork away the soil, working towards the vines, until a good body of roots is reached. Preserve as many of these roots as possible, keeping them damped and shaded until they are planted again in the new soil. After clearing away the old border, place a thin layer of concrete over the bottom to prevent the roots from again entering the sub-soil. Make sure the border is perfectly drained by employing plenty of bricks for this purpose. For making the new border, procure some rich loam from an old pasture, and mix with this some old mortar-rubble, wood-ashes, and crushed bones. Artificial manures can be used to better advantage when the border has become full of roots, applying them in the form of top-dressings just before watering the soil. This will encourage the roots to the surface of the border. Do not commence laying in the roots until half the border is made, then lay them in tiers as the work proceeds. Give the whole a good watering when finished. Syringe the vines two or three times each day in fine weather, and shade them from bright sunshine.

Communications Received. J. W., Finchley—G. T. J. P., Salisbury—Constant Reader, N.B.—R. G. P., A. E. D., Hailsham—A. W.—E. S.—J. P., Kildare—J. H. M. S., J. J. C. W. T.—A. B. S., G. M. T., Midlothian—J. O'B.—H. T.—C. T. D.—J. D.—F. C. L.—S. L.—R. P.—E. M.—R. I. L.—M. B.—"Surrey Observer"—A. P.—E. P.—S.—R. W. T., Leicester—G. H.—A. A. P.—W. P.—T. S.—J. G.—S. A.—H. S. T., Parkstone—R. P. B.—F. W.—H. N. R., Singapore—Mrs. W. F. J.—C. S. & Co.—A. C.—J. D.—W. H. M.—S.—C. H. A. B.—J. T., Surrey—F. H.—E. S.—S.—Cornflower—La Jardinier, Essex—G. J. F. R.—L. Bros.—B. G. H. Bros.—W. W.—E. W. P. Lances—E. H. C. T.—W. M.—H. W., Cornwall—H. Canwell R. B.—G. W. L.—W. C.—S. & Co.—W. J. V. H. A. P.—L. B. A. O., Surrey.

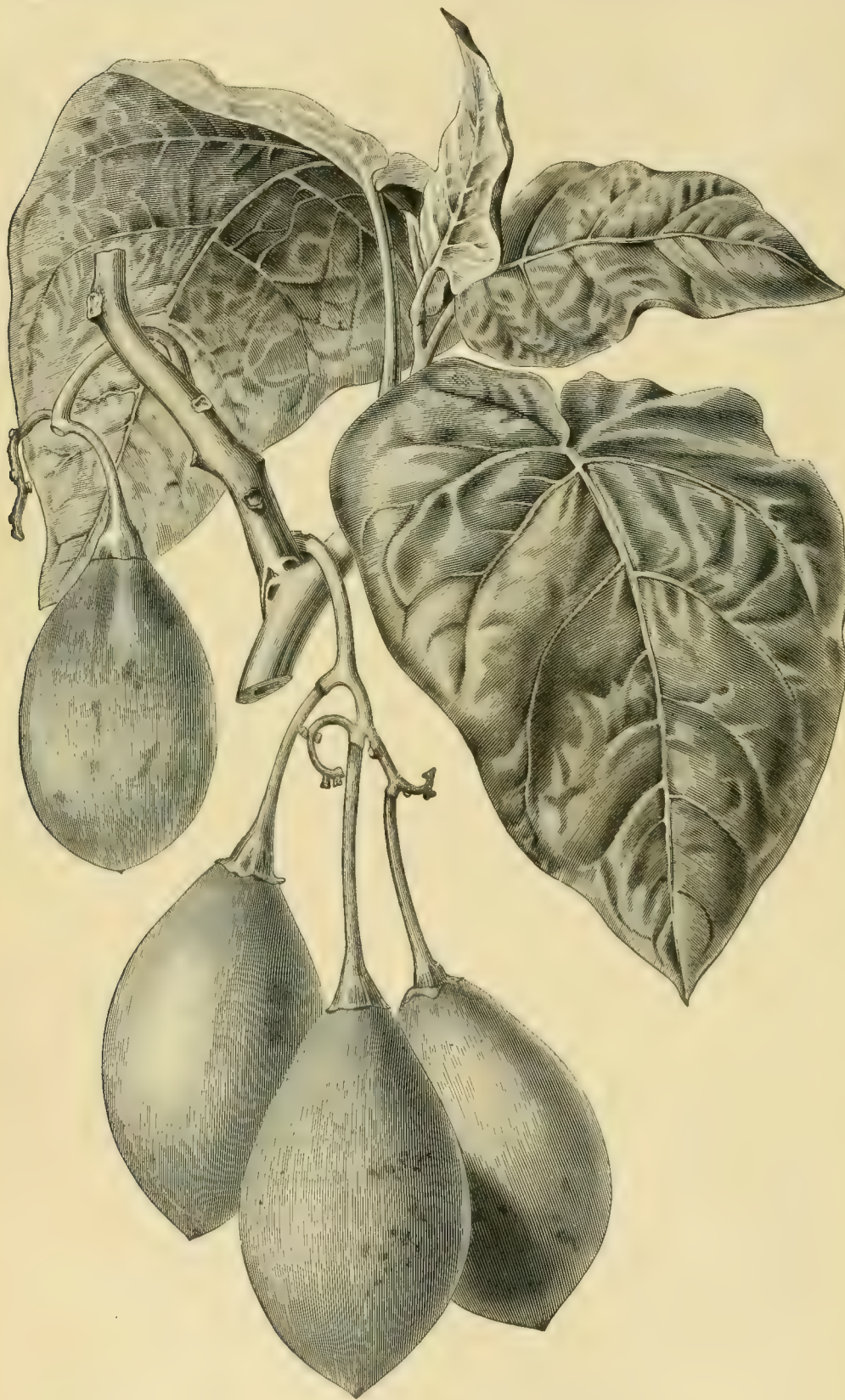


FIG. 121.—CYPHOMANDRA BETACEA: THE TREE TOMATO.

PETUNIA: *E. G. F.* Cuttings of Petunias and Salvias intended for flowering in February and March should be inserted in the first week of September and grown in cool conditions. The present date is rather late for your purpose.

PLANTAINS ON LAWN: *J. W., Ealing.* Continue to dig out the plants, filling in the holes in the

closely, so that the flower-spikes do not develop.

RHODODENDRON DAMAGED: *W. H.* No disease is present. The injury is caused by the nibbling of some small rodent. The most certain means of preventing such injury is to protect the stem by means of a band of fine wire net



Photographs by Jno. Gregory.

PELARGONIUMS IN TUBS AT GUNNERSBURY HOUSE.

THE PLANT SHOWN AT TOP IS *P. RADULA MAJOR*; THE LOWER ONE IS *P. CAPITATUM*.



THE

Gardeners' Chronicle

No. 1,243.—SATURDAY, October 22, 1910.

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BACTERIA AND AGRICULTURE.*

THE many and important parts played by bacteria in the work of the world are now widely recognised. Certain of these minute forms of life deal out death—these are the pathogenic bacteria, the disease-producing agents of such maladies as tuberculosis, typhoid fever, diphtheria, and so on. Other species of bacteria bring about, in ordered stages, the decomposition of dead organic matter, and in doing so provide the raw material out of which new generations of plants and animals are constructed. To yet other species is confided the all-important task of enhancing the fertility of the soil by the "fixation" of free nitrogen—that is, by causing the nitrogen of the air to combine with other elements to form compounds which serve as sources of nitrogen to the higher plants. Nor does this complete the tale of the activities, beneficent and malign, of bacteria. Besides being the scourges of mankind, the scavengers of the earth, and the fertilisers of the soil, they play essential parts in the chemical operations which underlie all manner of industrial processes, such, for example, as cheese and butter making.

With the recognition of the varied and fundamental parts played by bacteria in the

world's work, it has become one of the definite objects of biological science, not only to complete the discovery of their activities, but also to control them; for this is the first step towards the systematic scientific exploitation of bacteria in the interests of mankind.

As the outcome of the efforts in this direction we have an immense amount of recorded research scattered through the pages of a hundred scientific periodicals, and it is time, as Professor Percival, the author of *Agricultural Bacteriology*, recognises, for scientific agriculturists to gather together the chief results of these investigations, and to present them in intelligent form to the wide public which does not read the technical journals. We may say at once that Professor Percival has carried out this heavy task in an admirable manner, and has produced a book which will prove of great service to the agricultural and horticultural student. Recognising, moreover, that it is not enough for the student to read about bacteria and their manifold forms and activities, Professor Percival has provided in the text a very complete course of instruction for practical work in the laboratory. Aided by these instructions, the student, who has the ordinary resources of a laboratory at his disposal, may isolate the micro-organisms which he wishes to study, cultivate them in appropriate media, and follow the chemical changes which they set up in these media. The practical exercises refer not only to the bacteria of the soil, but also to those concerned in the changes undergone by milk, in the ripening of cheese, and in developing the flavour of butter; hence, the text-book is as valuable to the worker in the dairy as to the purely agricultural student.

Though the method of incorporating the practical laboratory instructions with the text enhances the value of the work to the student, it detracts from its readableness, so far as the general reader is concerned. This is, however, inevitable, and does not imply a criticism of the text, which is written in the direct, simple and yet vivid, style which we are accustomed to expect from Professor Percival.

If the general reader, who has neither the time nor opportunity for practical exercises, skips adroitly the "instructions for experiments" and picks out for perusal the chapters on subjects in which he is specially interested, he will discover a mass of interesting and valuable information on the most varied aspects of agricultural bacteriology. To the horticulturist, the chapters on the bacteriology of the soil, nitrification, denitrification, the fixation of nitrogen and farm-yard manure, will prove of the greatest interest. The worker in the dairy will discover the clue to the significance of the many remarkable changes which he witnesses and seeks to control in the sections dealing with milk—its bacterial flora and the fermentations which it undergoes, the rationale of filtration, cooling, Pasteurisation, and sterilisation, the separation of cream and the making of butter and cheese. The general reader who dips into these pages will learn that there is more of romantic episode in the lives of the bacteria than in those of the heroes and heroines of current fiction, and all will agree that Professor Percival is to be congratulated on the issue of a work of fascinating interest and permanent value.

TEN DAYS IN CO. KERRY.

(See Supplementary Illustration.)

THE following notes on Co. Kerry and its remarkable flora are based upon a visit made in July to Caragh and Killarney, in company with my friend Mr. Arnold Elliott. The district had been so dry for weeks that the rivers were quite low and the salmon had got stale, so that the fishermen had departed. This state of affairs, however, did not affect the lake-fishing for trout, and on two days when there was a nice ripple on Lough Acoose we enjoyed ourselves among the trout, which afford here such excellent sport.

Lough Acoose is beautifully situated at the foot of Carrantual (3,414 feet), the highest mountain in Ireland, and slightly higher than any in England. It was in ascending Carrantual (called Carrantuohill on the Ordnance map and Carn Tual in *Glebe Hibernica*) that the more interesting botanical observations were made.

My companion makes no claim to be a botanist, but he has an innate faculty for finding good plants if they are to be found; and let it be said here that during a skiing holiday in Switzerland last winter he managed to grub up through the snow quite a wonderful collection of interesting Alpines which are succeeding capitally on his rockery. Thus at Whitsuntide he showed me a patch of *Linaria alpina* as floriferous and as brilliant in colour as any to be seen in the Alps.

During our first afternoon in Ireland, Elliott surprised me by bringing a specimen of the rare *Sisymbrium angustifolium*, which his keen eyes had seen close to the edge of Lough Caragh, while I had been busy photographing. This North American species was not found in Ireland until 1845, and is unknown elsewhere in Europe, except as an acknowledged introduction. Dr. Scully, who is preparing a book on the flora of Co. Kerry, says: "The more I see of the distribution of this plant in Kerry the more I am inclined to consider it indigenous there." By Lough Caragh it was associated with *Drosera*, *Lobelia Dortmanna*, and *Bog Asphodel* (*Narthecium*).

In *Irish Topographical Botany*, Mr. Lloyd Praeger remarks that "the division of S. Kerry is formed of great folds of Lower Devonian slates and sandstones; the anticlines, including the highest mountains in Ireland, run in massive promontories far into the Atlantic, the synclinal valleys being occupied by carboniferous limestone to a limited extent." One-third of the total surface is unreclaimed mountain, and, of the remainder, two-thirds are under grass; of this area, 24 per cent. is over 1,000 feet in elevation.

We had taken no botanical book with us—not even the useful *Handlist of Irish Flowering Plants and Ferns*, compiled by Miss Knowles, and recently issued for 1d. at the National Museum, Dublin. Nor did we have Praeger's excellent little *Tourists' Flora of the West of Ireland*, with its beautiful photographs of typical vegetation and plant associations. So that all our "finds" were accidental and more or less in the nature of surprises. But when we got to Dublin we regretted we had not bought the *Tourists' Flora*, especially as it is quite the cheapest botanical book for 3s. 6d. we ever set eyes upon. It does not comprise Co. Kerry, which region Dr. Scully is doing separately. Though we had not intended doing much botany, the force of circumstances compelled us to be interested in the vegetation. In our first morning ramble, we came across the three *Pinguicula*s growing together—*grandiflora*, (passed flowering), *vulgaris*, and *lusitanica*. Why *Pinguicula grandiflora* should be found on the continent of Europe and re-appear in the West of Ireland without condescending to associate with its mean little brother *lusitanica* on the cliffs near Penzance, or on the boggy heaths of Dorset, is difficult to understand. *Euphorbia hiberna*, whose handsome foliage was rapidly turning a glorious red colour, is not quite so

* *Agricultural Bacteriology*, by John Percival, M.A., Professor of Agricultural Botany, University College, Reading, with illustrations and diagrams. Large crown 8vo., 7s. 6d. net. (Duckworth & Co.)

shy of England, for it does appear in some abundance in the Lyn Valley of North Devon, where the geological formation and, consequently, the scenery are so similar to those of Kerry.

Other rare plants found in Kerry and the south-west of England are the Cornish Moneywort (*Sibthorpia europæa*), *Bartsia viscosa*, with its lovely lemon-yellow flowers, and *Inula crithmoides*. The abundance of two commoner plants, *Jasione montana* and *Cotyledon umbilicus*, in the hilly parts of both these large districts may also be noted. The *Arbutus* tree is still in evidence in a few places by the Lake of Killarney, in which situation it grows finer than in the drier climate of the south of France where it is much used for firewood. *Simethis bicolor* is confined in Ireland to southern Kerry; and among other rare or characteristic plants in this division of Ireland are *Thalictrum alpinum*, *Saxifraga Geum*, *S. umbrosa*, *S. Sternbergii*, *Carum verticillatum*, *Juncus tenuis*, *Eriocaulon articulatum*, *Carex punctata*, *Deschampsia alpina*, *Asplenium lanceolatum*, *Aspidium Lonchitis*, and *Pilularia*

an interminable and very stony gully. Hooker says of the two British Filmy Ferns in *Brit. Fl.* (1830): "No one, I believe, was aware of their real differences till Mr. W. Wilson found them both growing at the Lake of Killarney, and distinguished them specifically."

We found 15 flowering plants on the summit of Carrantual, viz., *Saxifraga umbrosa*, *S. stellaris*, *Galium saxatile*, *Vaccinium myrtillus*, *Armeria maritima*, *Thymus serpyllum*, *Rumex Acetosa*, *R. Acetosella*, *Luzula maxima*, *Juncus trifidus**, *Carex rigida*, *Agrostis canina*, *Festuca ovina* and *forma vivipara*, *Sieglingia decumbens*, and *Deschampsia flexuosa*. Mr. F. N. Williams, in his interesting compilation on *The High Alpine Flora of Britain*—a list of the flowering plants and Ferns found at 1,000 metres and upwards on the mountains of the British Isles, with authentic references and critical notes (1910)—gives one or two others from the top of Carrantual, 1,041 metres, but he does not record *Juncus trifidus*, except from Scotch summits, while *Sieglingia* (*Triodia*) *decumbens* is absent alto-

see a good crop of Rushes in these deep trenches; while we took a charming photograph of a Potato field in which Foxgloves and Bracken were the predominating feature of one corner. The Foxglove is remarkably ubiquitous in Kerry, and is to be seen in low-lying turbaries and high up on some of the mountains, where occasionally it can be found on the red rocks, just as it was growing recently on the Malvern Hills.

The first and third photographs reproduced in the Supplementary Illustration were taken on the narrow ridge of Carrantual uniting Caher (3,200 feet) with the summit (3,414 feet) and overlooking to the N.W. the mountain tarns of Coomloughra and Eagher, some 1,500 feet below. *Saxifraga umbrosa* was growing finely in the rock crevices, but, owing to deep shadow and the smallness of the photographs, it is hardly visible. No. 2 shows a steep escarpment of Devonian rock, with the summit of Carrantual across the deeply-cut valley. The fourth view indicates the *Arbutus* (and Oak) skirting the Lake of Killarney. *H. Stuart Thompson.*

ASTILBE SIMPLICIFOLIA.

IN contrast with the many tall-growing species introduced into cultivation from China during the last few years, this dainty little plant from Japan only attains a height of 9 inches to 1 foot. It was first received amongst some imported plants of *Schizocodon soldanelloides* by Messrs. Stansfield Bros., of Southport, in 1908, and also by Messrs. Barr & Sons, with whom it flowered freely and attracted favourable attention on account of its charming habit and free-flowering properties. The plant forms a tuft of radical leaves on petioles 3 inches long. The leaves are ovate in outline, irregularly lobed and incised, 3 inches long, and 1½ inch to 2 inches wide in the broadest part. The inflorescence, produced well above the foliage, is borne on leafless stems, and is about 3 inches wide. The numerous small flowers are starlike, pure white, and feathery in appearance. *A. simplicifolia* commences to flower early in August and continues to produce a long succession of flower till well into October. It is quite hardy, but from present experience, the plant flowers so freely that if it does not die outright, it is so weakened that it fails the following season. Seeds, however, are produced freely and germinate readily. In the first stages, the seedlings are very slow-growing, but afterwards they make rapid progress. The plant requires a moist, shady situation, similar to that suitable for *Shortia* and *Schizocodon*. This is the second interesting and useful plant that has been introduced from Japan in the same way, the pretty *Patrinia palmata* having first come over mixed with *Schizocodons* a year or two ago. They are both charming little plants for the rock-garden. *W. I.*

CULTURAL MEMORANDA.

CULTIVATION OF THE MOREL.

OPINIONS differ as to the possibility of making the cultivation of the Morel (*Morchella esculenta*) pay. It has been observed in France that the fungus succeeds in the vicinity of Artichokes, and spreads between the plants when the moisture in the soil is sufficient for its needs, and is regular. But in places where the Morel grows naturally, the esculent can be collected, and put on the market in the fresh or dried state at a cheap price, so that the garden culture, in view of the varied accidents to which it is liable, is not to be recommended. The esculent might be cultivated in hilly districts, in shady places, in parks, and on the borders of Fir plantations, where the soil is suitably moist. To make sure of a crop, the soil should be strewn with the waste from Morels, or the spawn or brood. Success is dependent on the weather. Every fungus collector knows certain spots where the Morel grows, and can usually obtain a supply after rainy weather. *F. M.*



FIG. 122.—ASTILBE SIMPLICIFOLIA: FLOWERS WHITE.

globulifera. *Eriocaulon articulatum* Morong. = *E. septangulare* With. is a North American species, not found on the Continent of Europe, and confined in Great Britain to a few of the Hebrides.

In climbing Carrantual from Glencar, Elliott discovered the beautiful and extremely rare *Saxifraga Sternbergii* at about 2,500 feet, where the hillside is pink with a dwarf form of *Armeria maritima*, which continues its course to the summit. We also saw the *Saxifraga*, when descending by a different way, growing with the rare *S. decipiens* Ehrh. and *S. stellaris*. But my companion's most startling find was a somewhat dried-up mass of *Hymenophyllum peltatum*, at the very unusual height of 3,000 feet. It was growing at an awkward spot, perhaps never visited by any botanist, for, apart from the fact that this mountain is not often climbed, we were trying to make our way down the N.W. arête, and, in seeking a passage over one of the numerous buttresses of this ridge, the Filmy Fern was noticed. A specimen was captured, but the rocky buttress was not, and instead we descended

gether from this list of 1,000-metre plants. Let it be noted that no mountain in England attains to 1,000 metres. Slightly lower, at about 3,000 feet, we found *Viola Riviniana*, *Saxifraga decipiens*, *Sedum Rhodiola*, *Calluna*, a *Euphrasia*, and *Salix herbacea* at 2,700 feet. In one spot above the picturesque valley of Caragh, we saw *Cardamine amara*, which appears to be recorded only from six of the northern divisions of Ireland. Near Killarney the rare *Orobancha Hederæ* was parasitic upon Ivy.

A remarkable feature of the Alpine flora in the west of Ireland is the way in which various species descend to sea-level or near it, and especially in Co. Clare. *Saxifraga Sternbergii* and *Gentiana verna* are examples, while the Alpine-Arctic *Dryas octopetala* and the Mediterranean *Habenaria intacta* grow side by side, as so well illustrated in *The Tourists' Flora*.

Potatoes are generally planted in deeply-trenched rows about 4 feet wide in the peat of Co. Kerry, and it is not an infrequent sight to

* Dr. Scully tells me this "is the first modern record for Ireland."

SAXIFRAGA TRIFURCATA.

THE Saxifrages which await the choice of the cultivator of Alpines are bewildering in numbers. The dactyloides or mossy section alone would form subjects for many years of collecting and study. It is, however, denied to all but a few to cultivate so many of these flowers as to constitute a collection, and in the possession of a few will be found sufficient pleasure for most of us. A comparatively small number of the mossy Saxifrages is sufficient for most gardens, and in *S. trifurcata* (see fig. 123) we have one which ought certainly to have a place. It makes a fine mound of dark green foliage, prettily divided in such a way as to bear with appropriateness the popular name of the Stag's Horn Rock-foil. Where it is happy, it is charming indeed, being a mound of green all the winter, and in spring almost completely covered with snow-white flowers on slender stems, lifted well above the leaves. The plant figured is growing at the base of a rockery facing N.N.W., and is partially screened from sunshine. Here it has flourished for more than five years, without any attention except removing the flower-stems after the blooms have withered, and getting a little restriction when the roots ventured to encroach on neighbouring plants. Other plants of this Saxifrage in more open and sunny places have not thriven so well. It is in sandy loam, and requires no other compost. Propagation is effected by division, seeds or cuttings. The species is a native of Spain. *S. Arnott, Dumfriesshire.*

ORCHID NOTES AND GLEANINGS.

ORCHIDS AT GLEBELANDS, SOUTH WOODFORD.

It is generally recognised that one of the greatest hindrances to successful plant culture, and especially choice subjects such as Orchids, is a deleterious atmosphere. But although smoke and fogs have an injurious effect on plant life, it is often found that collections in the neighbourhood of large towns appear far more healthy than others in the open country.

The fact demonstrates that there is more in providing proper accommodation, and giving skilful attention than in the purity of the atmosphere in which the plants are grown. The highest illustration of this assertion is to be found in the collection belonging to J. Gurney Fowler, Esq., at Glebelands, South Woodford (gr. Mr. J. Davis), which, although in the metropolitan area, compares favourably with any other in the country. It is not too much to say that there is not an unsatisfactory plant in any of the houses, and the stout pseudo-bulbs and broad green leaves are pleasant to behold, even when the plants are not in flower.

In the *Cypripedium* houses are great masses of most of the rarer kinds, including the unique *C. Leea*num "J. Gurney Fowler," the handsome *C. Thalia* "Mrs. Francis Wellesley," *C. Thalia* New Hall Hey var., a fine, dark-flowered form of *C. Wiertzianum*, *C. Ernest* Read, a Glebelands novelty, and one of the largest and best shaped of the light-coloured *Cypripedium*s; some fine *C. Troilus*, and a new and large form of *C. Salieri*. There are scores of other handsome hybrids besides those mentioned, while in the range devoted to varieties of *C. Leea*num and *C. insigne*, a batch of the favourite *C. insigne* *Sanderæ* and plants of the dark and finely-formed *C. insigne* *Fowlerianum* attract attention. In the same house, suspended overhead, are a number of fine tufts of the scarlet *Sophranitis grandiflora* and its hybrids *Sophranitis-Cattleya* *Doris*, which are specially fine specimens. With them also are choice varieties of *Lælia pumila alba* with flowers about to expand. *Lycastes* and *Anguloas*, which many persons fail to grow successfully, are in especially good form, a few of the plants being in flower. We noticed a fine plant of the lemon-

yellow and purple-bloomed *Anguloa Cliftonii*; a sturdy batch of *Miltonia Roezlii*, part of a house filled with *Miltonia vexillaria*; and an almost complete collection of *Cymbidiums*, including some very promising hybrids from *C. insigne* (*Sanderi*); one between that species and *C. Schröderianum* having very large pseudo-bulbs, intermediate in form between the parents and furnished with two very strong inflorescences, which will shortly be in flower. The smaller, lean-to range of glasshouse, the back of which is covered with *Epidendrum O'Brienianum* and *E. radicans* has, suspended from the roof, plants of the best varieties of *Lælia anceps* well set with flower-spikes; in the adjoining division a number of *Phalænopsis*, with large, fleshy leaves, are thriving well, whilst a batch of *Calanthe Veitchii* and other deciduous *Calanthes* occupy the stage and promise well for winter flowering.

the sepals and petals of which are Indian yellow, tinged and spotted with dark red, the lip being carmine-crimson; *C. Elvina* (*Trianae* × *Schilleriana*), *Lælio-Cattleya Clonia superba* (*L.-C. elegans* *Turneri* × *C. Warscewiczii*), an early *Veitchian* hybrid of fine colour, and various other handsome hybrids.

The *Odontoglossum* house is the crowning feature in the Glebelands collection, as both the house and its appointments, as well as the plants contained in it, are of the highest order of merit. The extensive tanks and moisture-holding surfaces ensure a healthy, moist, atmosphere, and the heating system admits of careful regulation, so that the house can always be kept comfortably cool. The plants are in fine health, and it is a pleasure to see them. The spotted forms of *O. crispum* receive special attention. A few *Odontoglossums* are in flower, chiefly rare

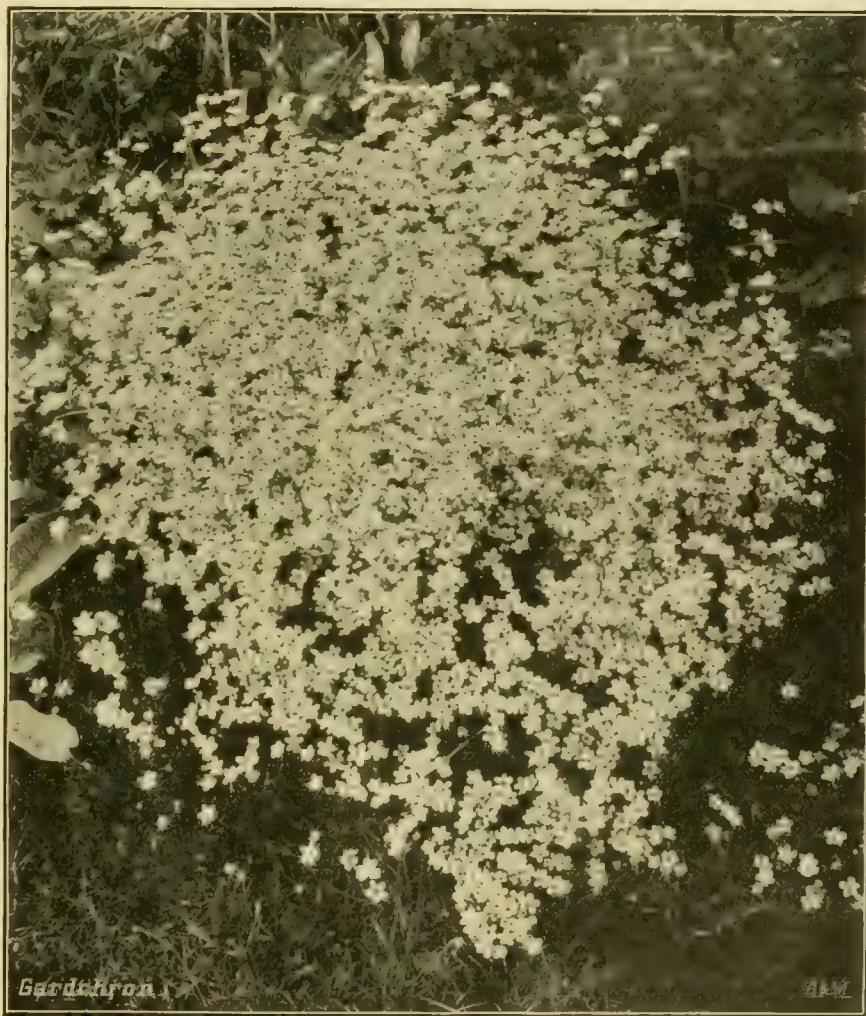


FIG. 123.—SAXIFRAGA TRIFURCATA.

In the *Cattleya* and *Lælia* house is a choice collection, including rare albinos, the white *Cattleya Warscewiczii* "Frau Melame Beyrodt," and some others being represented by from 6 to 12 specimens each. *Brasso-Cattleya* *Mme. Chas. Maren* has bright rose flowers with light centres. *Cattleya Mantinii nobilior* and other showy varieties were in flower, and others noted as specially good were *Lælia tenebrosa* *Walton Grange* variety, *Brasso-Cattleya* *The Baron* and *Brasso-Lælio-Cattleya* *Fowleri*, the flowers of these being of exquisite shades of orange, Indian red and crimson. In the large hybrid house devoted to seedlings, are many hybrids approaching flowering size raised at Glebelands. Here the fine forms of *Cattleya Iris* and *C. Adula* were well in bloom, together with the handsome but little known *C. Rosa* *Leemann* (*amethystoglossa* × *Dowiana aurea*) with a fine spike of flowers,

hybrids: one, the result of crossing *O. ardentissimum* with the pollen of *O. Pescatorei Veitchii*, is flowering for the first time; it has perfectly-shaped, pure-white flowers with the light violet markings suggestive of the rare *O. Pescatorei Veitchii*; another hybrid has large flowers with a rosy-ground colour heavily blotched with claret-purple, the large and curiously-formed lip having dark markings at the base and several rows of small rose-coloured spots inside the margin. At Glebelands is the entire stock of the very handsome *O. Smithii*, figured in the *Gardeners' Chronicle*, December 16th, 1905, p. 427; *O. Aliceæ* (*Edwardii* × *crispo-harryanum*), and many other rare hybrids, together with some interesting crosses raised by Mr. Fowler. In the collection of *Odontiodas*, the first *O. Charlesworthii*, the brilliant red *O. Keighleyensis* *Fowler's* variety, *O. Vuylstekeæ*, and most of the

other varieties have very large pseudo-bulbs, scarcely recognisable from those of *Odontoglossum*. At the end of the house Masdevallia Bocking hybrid, *M. Schlunii*, *M. Lindenii*, *M. Carderi*, *M. Veitchiana*, and others are finely flowered, and *Oncidium varicosum* Rogersii, *O. lamelligerum* and other cool-house species are also well in bloom. In two of the stove houses are collections of *Selaginellas*, pretty plants that were formerly cultivated extensively.

CATTLEYA MADAME PAQUIN (MANTINI NOBILIOR × HARDYANA).

A FLOWER of this charming new hybrid is sent by Messrs. Stuart Low & Co., Bush Hill Park, the raisers. The novelty is well worthy of the parents from which it is derived, these being both favourite flowers. The blooms of *C. Mme. Paquin* are over 4 inches across, and the petals are 2 inches wide, all the segments being proportionate, and constituting it a good florist's flower. The sepals and petals are of a bright rosy-mauve colour, the white ground colour showing slightly between the veining. The broad and well-formed lip is claret crimson in the centre and mauve on the margin, the central area having gold lines, as in *Cattleya Dowiana*. It is said that the flowers are borne four or five on each inflorescence; but when the plant is fully developed, more may be expected.

PLANT NOTES.

CISTUS RECOGNITUS.

AT Kew the other day, under this name, I found a beautiful spotted kind of *Cistus* still in flower. I did not know of this plant, and in the issue of August 13, p. 118, I drew attention, as I then supposed, to all the spotted *Cistuses* that were known. This *C. recognitus* at Kew is quite distinct from all the others, and I missed it, no doubt, because Grosser, in Engler's *Monograph*, does not describe his plant under this name as spotted. He states that the plant under this name is a cross between *C. laurifolius* and *C. monspeliensis*. But how then, it may be asked, has it got spotted flowers, since neither of these reputed parents has spotted flowers? The plant at Kew has rather the character that might be expected in *C. ladaniferus* × *monspeliensis*, but, if it had that origin, it would be the *C. Loretii* which I mentioned in my article. Whatever it is, it is not, I should think, the *C. recognitus* of Engler's *Monograph*. That plant has lanceolate or linear lanceolate leaves, while this I noted as having ovate-obtuse leaves. The plant, however, is quite charming; it has much the habit of *C. monspeliensis*, being dwarf and shrubby. The young stems are reddish, the lower leaves are ovate, obtuse, flowers 3 or 5 together, not very large, being only about 2 inches across, but pure white with deep maroon-coloured blotches. The plant is as clammy and strongly fragrant as of *C. ladaniferus*. According to Grosser, *C. recognitus* is found wild in the South of France. My object in writing is to supplement my article above referred to, and to draw attention to a good plant, but not to determine, with the means I have, what its name should be. *R. Irwin Lynch.*

CLERODENDRON TRICHOTOMUM.

THIS *Clerodendron* is a shrub or small tree well worth growing in the southern part of England, as it is ornamental both in leafage and in flower. The blossoms are produced towards the end of the summer and in early autumn, when most other hardy shrubs are over. It is tree-like in habit, and is seen to the best advantage when the main stem is kept free from suckers. The spreading branches are fairly stout and are clothed with broadly ovate leaves, 6 inches to 8 inches long, and deep green in colour. The flowers, which are borne in large,

terminal, freely-branched panicles, are white, and have the form of a five-pointed star. As in many other *Clerodendrons*, the calyx forms a showy feature of the inflorescence. In this species, the calyx is of a reddish-purple tint. *Clerodendron trichotomum* is a native of Japan and was introduced to gardens as long ago as 1800, but it is only within the last 20 years or so that it has become generally known. Propagation can be readily effected by means of root cuttings taken during the winter and inserted in a bed of sandy soil.

Another hardy species is *Clerodendron fedidum*, which dies down to the ground in winter and in summer develops shoots 3 to 4 feet high, which are at this season terminated by closely-packed heads of reddish flowers. These are fragrant, but the leaves, when roughly handled, give off an unpleasant smell. This same character is very pronounced in *C. fragrans*, a stove species. *W.*

FLORISTS' FLOWERS.

SWEET PEAS UNDER GLASS.

OCTOBER is the best time to sow seeds for raising Sweet Peas to flower early under glass. They should be sown in shallow boxes or pots, which should be placed in cold frames and kept fairly close until germination takes place. After germination, all the air possible should be given during open weather. When the plants are about 2 inches high, they should be potted up singly in 3-inch pots, and put back into cold frames, plunging the pots to the rims in ashes, in order to preserve the roots from frost. In the first week in February they should be transferred to their permanent quarters. Sweet Peas require very little heat. A house employed for perpetual flowering Carnations suits them well, because the Carnations, like the Sweet Peas, require plenty of air, very little fire heat, and not too much moisture in the air. If there is plenty of room in the centre of the house, it is best to grow the Sweet Peas in a trench, and plant a double row at an angle, each plant about 1 foot apart. Trenches should be dug to a depth of 18 inches, and good rotten farmyard manure well mixed with the soil, leaving the trench several inches below the level of the walk to allow for watering. A neat way of staking Sweet Peas under glass is to use thin tapering canes, 9 feet or 10 feet in length, inserting them in the ground by the side of the plants, and tying them to the top wire in the ridge. After staking each plant singly, another cane should be put lengthways, about 4 feet from the ground, and each upright tied to it. Raffia or thin string can be strung from cane to cane to tie in the lateral growths when they appear. If grown in these conditions, the plants should be showing buds when about 3 feet to 4 feet high, and may be expected to bloom at about the end of April. When the flower-buds appear, the roots should be watered about twice weekly with dilute liquid manure, and an occasional application of a fertiliser will greatly assist in developing the colours of some varieties and also the length of stem.

Certain varieties are better adapted for glass culture than others. Some of the best are Clara Curtis (primrose), Elsie Herbert (white, with Picotee edge), Frank Dolly (lavender), Etta Dyke (white), King Alfonso or Sunproof Crimson, Earl Spencer (salmon), Mrs. H. Sykes (pink), Mrs. Townshend (lilac, with Picotee edge), Mrs. C. W. Breadmore (buff, with Picotee edge), Nubian (maroon), Senator Spencer, and John Ingman.

Any cool house is suitable for growing Sweet Peas, provided they can be given plenty of air and the necessary height for their growth. If well grown, they generally attain a height of 11 or 12 feet. *George Herbert, Winchester.*

HARDY PLANT BORDER.

POTENTILLA LANUGINOSA.

THERE are a considerable number of the shrubby *Potentillas*, or Cinquefoils; but it is strange that, with the exception of *P. fruticosa*, varieties of *Potentillas* are rarely met with in gardens. Nevertheless, several of the more recently-introduced species and hybrids are more useful and beautiful than the older *P. fruticosa*. One of the least known is also one of the prettiest, this being *P. lanuginosa*. Owing to its small stature, it is more suited for the Alpine garden than for the shrubbery or the flower border, but it might be employed with other choice, low-growing plants in the front of the shrubbery.

Young plants are dwarf, only growing a few inches high; but I have a specimen which is about 2 feet high, the plant having been in my possession for many years. Its rate of increase in height is very slow. The species forms a mass of tangled, curving, brownish, wiry branches, which are plentifully covered with beautifully-formed, toothed leaves of a delightful silvery-grey colouring. The texture of these is more silky than woolly, a fact which the specific name does not convey. Amongst this mass of leaves there are borne in late summer, and far into autumn (indeed, into early winter), bright, clear, yellow flowers, about 1 inch across. There is no other small shrub which has precisely the same effect at this season. I have amply tested its hardiness, and have no hesitation in saying that *P. lanuginosa* can withstand the most severe winters of this country. Nor is the plant difficult to accommodate in the matter of soil. Loam, sand, and grit, with a few stones, will suffice for its needs, and a little leaf-soil or peat is no disadvantage. A sunny position is the best, and in such it will give its most pleasing appearance. I have propagated it from cuttings taken off with a heel of old wood and inserted in a pot of sandy soil in a cold greenhouse; but they root more readily if a little bottom heat is afforded. *S. Arnott.*

PENTSTEMON TRIFLORUS.

PENTSTEMON TRIFLORUS is a recent addition to the members of this genus in cultivation. It forms a bushy plant, about 3 feet high, covered with dark green foliage, and bears loose panicles of long, coral-red flowers. The species is a native of Mexico, and was introduced to gardens by Messrs. Bees, Ltd., in 1908, under the name of *P. isophyllus*. This *Pentstemon* is quite hardy in dry, sheltered positions, and has survived the last two winters unprotected in the rock garden at Kew. The flowers measure 1½ inches to 1¾ inches in length, and are produced freely during the whole of the summer and well into the autumn. Like all *Pentstemons*, it is easily increased by means of cuttings, and it also ripens seed freely. Several other members of this family are also in flower at the present time, including the distinct and small-growing *P. antirrhinoides*, an erect, bushy plant, with lemon-yellow flowers and small leaves. This species is a native of California, and is sometimes known as *P. Lobbi*. *P. cordifolius* is another Californian plant of shrubby, scandent habit, more suited for a sunny wall than the border. At Kew it grows several feet high, and produces its scarlet flowers in late summer and autumn. *P. grandiflorus*, from the open prairies of the United States, grows from 2 feet to 4 feet high, with broad, glaucous foliage—the stem leaves being perfoliate—and large lavender-blue flowers. One of the smallest species is *P. Jamesii*, which grows only a few inches high. The leaves are linear, and the flowers pale slaty-blue. This plant is a native of the Southern United States. *W. I.*

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

DR. J. NEVILLE KEYNES.—The election of this eminent scholar to the office of Registrar of the University of Cambridge, which has just taken place, recalls to memory one of the same surname, our scholar's most esteemed father, John Keynes, the famous florist of Salisbury. John Keynes and his contemporaries (Charles Turner, W. Bragg, A. Dodwell, Samuel Barlow, F. D. Horner, James Douglas, Richard Dean, and others, not forgetting old George Glenny, constituted a remarkable group of distinguished florists. Wonderfully good work in relation to floriculture did these men do, or still seek to do. There is not now that same devotion to form or to outlines in flowers which characterised the ideals of these earnest men. John Keynes, founder of a famous Salisbury firm, left his impression in horticulture to a remarkable degree. His talented son prefers to devote his abilities to the university world. Those who have followed his career have the pleasure of knowing that the same earnestness, acute intelligence, and devotion to work which distinguished the father in one walk of life characterise the son and have brought him distinction in another. D.

ENDEMIC PLANTS IN THE MARITIME ALPS.

In connection with Mr. Reginald Farrer's interesting articles on the Götian and Maritime Alps and the extremely confined habitats on the primary rocks of *Viola valderia*, *Saxifraga valdensis*, and *S. florulenta* in particular, the following paragraph from Dr. Briquet's *Le Développement des Flores dans les Alpes Occidentales* (1906) (extracted from the *Résultats scientifiques* of the Botanical Congress at Vienna, 1905, pp. 130-173) may be worth translating here, for it confirms what Mr. Farrer has noticed. Mons. Briquet says in this learned work on the origin of the Alpine flora: "A salient point in the phytogeography of the Maritime Alps is the large proportion of localised crystalline (silicicole) endemic plants. Elsewhere in the Western Alps, the crystalline endemics are widely spread. The superb *Saxifraga florulenta*, *Pentstemon valdensis*, *Sempervivum Alboni*, *Galium Tende*, *Viola valderia*, *Oreochloa pedemontana*, &c., are pronounced 'silicicoles.' Several of these species have been able to exist during glacial times without going out of the central crystalline axis; all have been able to find on the grits of the outer chains excellent conditions of existence." H. S. Thompson.

NICOTINE PREPARATIONS.—On the subject of nicotine preparations, referred to on page 282, let me suggest that fruit-growers should be allowed to grow Tobacco under proper regulations for denaturing the crop when it has been cut, and heavy penalties for infringing such regulations. They would probably cure the whole plants in a rough-and-ready manner, and simply cut them up to a small extent for boiling to obtain extract.—There was a misprint on p. 273, which makes me describe Currant-leaf spot as a "beautiful" disease instead of a "harmful" one. A Southern Grower.

ABUTILON THOMSONII.—By the kindness of the Editors, a paragraph of enquiry for pollen of *Abutilon Thomsonii* was inserted in a recent issue of this paper. The result is of great interest, for it appears that the old *A. Thomsonii* has practically disappeared, its place being taken by a very similar but quite different plant. The original *A. Thomsonii*, I believe, I know well. I have had it here in the Cambridge Botanic Garden for many years, and in a local garden there is a fine specimen which the gardener informs me was purchased from Messrs. James Veitch & Sons, under the name *Thompsonii*, 35 years ago. It is identical with the plant I have always regarded as *A. Thomsonii*. It is, in point of fact, I believe, only a yellow, variegated form of *A. striatum*, having flowers of precisely the same shape and with the same deep-crimson veins. The plant I have now received from several sources, however, has a much softer leaf, pubescent beneath; the flowers are of different shape and colour, and have not the deep-coloured veins that are so ornamental a feature, while the

hairiness of the bud is quite different. I believe, however, that it may be a better plant horticulturally for golden effect; but this does not justify the name *A. Thomsonii*, and I should be very glad if any reader can give me its history, or the history of *A. Thomsonii*, which would also be of interest, as it is not in Nicholson's *Dictionary of Gardening*, nor do I find it in several books to which I have referred. It may be worth remark, perhaps, that the present interest in *A. Thomsonii* is on account of its complete self-sterility, so far as yet known. *Abutilon Boule de Neige*, however, does set seed with its own pollen. I understand. This genus, therefore, is like the genus *Passiflora*, in which some species appear to be perfectly self-sterile, and others equally self-fertile. R. Irwin Lynch.

WHY NEED THERE BE "EQUAL" PRIZES?

In these days, when point-judging is so general, I cannot see the necessity of awarding equal prizes. I do not agree with any judges who award equal prizes in a collection of even a few dishes of fruit or vegetables, but rather with the critics who say that the giving of equal prizes is merely an easy way out of a difficulty. The critics contend that there is always a difference in two exhibits, and it is the duty of judges to find it. At the recent fruit show held in Vincent Hall, equal third prizes were awarded in the class for a collection of fruit. From the freely-expressed criticisms of visitors, one was forced to the conclusion that no one but the judges agreed with the verdict given. I do not know who were the judges, but from what I saw of the two collections I do not think there should have been any difficulty in arriving at a different decision. The Grapes, Melon and Apples in one collection were decidedly superior to similar fruit in the other exhibit, whilst the Peaches in the latter were of poor quality. An Onlooker.

SCENTED-LEAVED PELARGONIUMS.—I was exceedingly pleased to read the remarks by Mr. Jas. Hudson on p. 278 on the varieties grown at Gunnersbury. May I point out that *Rollis* son's *Unique* was not included in the list? It is a very slow grower in some places, but it makes a charming basket plant, the beautiful, rich, crimson blossoms being very effective. Most of the larger flowering varieties are useful for furnishing hanging baskets for the conservatory. While one may not have the space or the ability to grow such fine specimens as those shown in the illustrations in the last issue, a selection of sorts is very useful, the leaves and shoots blending well with unscented flowers in the making of sprays and buttonholes. The foliage of the very small leaved forms are also used for placing in finger bowls. W. Warner, Road Manor Gardens, Bath.

—On reading Mr. Hudson's notes on *Pelargoniums* (p. 278), I am reminded of an idea bearing upon the subject, which has been in my mind for some time past. Some years ago I had charge of a large terrace garden, in which were a number of Standard H.P. Roses placed regularly in lines. During hot summers one or more of them were apt to die or become weakly in growth, thus breaking up the uniformity of the whole. We decided to grow about a dozen scarlet *Pelargoniums* as specimens about 3 feet in height, then stepping them so as to form good heads. They were in 10-inch pots, and were used as reserve plants to plunge in the place of the dead or decaying Roses. With care in wintering, they lasted in good condition for several years. The idea alluded to is to have similar Standards grown, and then inarched or grafted with some of the choicest Ivy-leaved varieties. If a light iron rod or stake with a triangular, three-pronged base and a circular top, say 18 inches to 2 feet in diameter, was affixed to each plant, there would be no risk of injury from breakage. Of course, stems up to 4 feet might be used. Is it not possible for some of our clever culturists to work up a batch in time for the forthcoming "International" in 1912? I venture to think that if a prize were offered for a group of varying heights arising out of a suitable groundwork, there would be competition for it. If well-grown, they would attract attention from visitors. I may as well add, the idea came into my mind on seeing some well-flowered Standards of Dorothy Perkins Rose. On looking over Mr. Hudson's notes again, it occurred to me that the variety "Clorinda" would make

a good stock to put Ivy-leaved varieties upon, and I have asked a county gardening friend, who has some big plants, to try and graft some. Yorkshire Gardener.

MAGGOTS ON PRIVET.—The destruction referred to by your correspondent A. (p. 267) is very widespread. A resident in the south-west of London, I have a tall hedge or screen of the Oval-leaved Privet, which is almost defoliated by the pest, and some Golden-leaved Privets, a considerable distance therefrom, are also badly affected. Last year a few leaves of the Golden variety showed some signs of damage. During a recent visit to Westcliff I noticed that nearly all the Privets in that seaside resort were more or less attacked by the pest, and if it increases next year to the same extent as it has done in my own suburban garden much future trouble may be anticipated. Everywhere around London the Privets seem to have suffered to a certain extent. The advice of your correspondent to closely shear all Privets and burn every scrap is very good, but it seems to me that the majority of the pests has already hibernated in many cases, possibly in the soil. W.

ERIOGONUM RACEMOSUM.—This little plant is of fairy-like beauty, as far superior to the common *E. umbellatum* as *Aster "Rycroft Purple"* is to the common *Aster Tricolum* of our estuaries; yet it is seldom to be seen. I have not noticed it in any collection except my own. Belonging to the Polygonaceæ or knotweeds, *E. racemosum* is very different in appearance from the rest of that Order. From a tuft of spoon-shaped radical leaves, clothed with dense, silvery tomentum on the backs, and set on 3 or 4 inch petioles, rise in June slender racemes 12 or 14 inches high, closely set with tufts of rosy pink blossoms. These delicate, plume-like spikes are produced continuously during the summer; many of them are in beauty at the present time (October 17). The plant is too choice an ornament of the rock garden to be neglected. It ripens seed freely, and appears content with ordinary loam mixed with peat. The clumps show no tendency to spread, so they cannot compete with such rampant growers as *E. umbellatum*. Herbert Maxwell, Monreith.

The Week's Work.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Birtford, Surrey.

General treatment.—With the advance of the season, the management of the houses will require some modification. Although the weather has been favourable to the occupants of the cool, intermediate houses, and to the *Odontoglossums*, *Masdevallias*, and other cool Orchids, the lack of sufficient sun-heat and light has hindered the growth of *Phalænopsis*, *Aërides*, *Saccolabiums*, the terete-leaved *Vandas*, *Catasetums*, and *Cycloches*, whilst the maturation of growth in *Cattleyas*, *Lælias*, *Dendrobiums*, *Thunias*, *Brassavolas*, some of the *Epidendrums*, and many of the Mexican and Brazilian species, is not so perfect as usual. It is desirable to remove all permanent shadings from the roof-glass, so as to expose the plants to all the light possible. The atmosphere of the houses should be kept rather drier than usual, and a free circulation of air will be beneficial during the day if it can be managed without causing any great fluctuation in the temperatures. A moderate amount of syringing on the paths, under the stages near the hot-water pipes, and between the pots, morning and afternoon, will suffice in any division, but should the weather prove to be cold and dry, with bright intervals of sunshine, a little extra damping may be necessary. After the permanent shadings have been removed, the sun may prove just a little too much for such species as *Phalænopsis*, *Aërides*, *Angræcums*, *Vandas*, *Renanthera Lowii*, *Cypripediums*, *Zygopetalums*. These, and any unhealthy plants which have been repotted recently should be placed by themselves in one part of the house, where they may be more conveniently attended to in this respect. In some cases, where there are only a few of such plants, a piece of tissue paper laid over them will answer the purpose. The cool house plants must be shaded from warm, bright sunshine, and,

where open lattice wood blinds are used, the extra light through these, as compared with the permanent shading, will tend to strengthen the foliage. These remarks apply to houses fully exposed to the sun's rays, while houses having a northern aspect will require very little, if any, shading after this date.

Watering and temperatures.—As regards watering, the plants do not now dry up so quickly, therefore the water-pot must be used with increased care, and the grower will have to be guided by the state of each plant, whether in active growth, at rest, or approaching the flowering stage. The temperatures of the houses at night must not be subjected to sudden changes; the grower should be on the alert for sudden falls in the outside temperature, so that, by carefully regulating the heating apparatus, they may not be allowed to injure the plants. It is a common occurrence towards the end of October and the beginning of November for moderate sharp frosts to occur before daylight, and often without the slightest warning. When such frosts come, the temperatures of the various departments are almost sure to be several degrees below what is considered their proper standard, unless forethought was exercised over-night. On these mornings, when the temperature is low, no watering or damping-down should be proceeded with until the proper temperatures have been obtained. In the East Indian house there are many plants which are easily injured by low temperatures of but short duration. For the next few weeks it is advisable when finishing up for the night to err a trifle on the high side with the temperature, and the dampers should then be so used as to allow a drop of several degrees by morning. For the next month or five weeks the night temperatures may be as follow:—**East Indian House**, 65° to 70°; **Cattleya and Mexican House**, 60° to 65°; **Intermediate House**, 55° to 60°. The greater heat should be maintained when the external air is mild; but when the exterior atmosphere is near the freezing point, the lower figures are preferable. The cool houses should be kept at about 55°; but, in the event of cold weather, the temperature may fall to 50°.

PLANTS UNDER GLASS.

By JOHN DONOGHUE, Gardener to JOSEPH PICKERSGILL, Esq., Bardon Hill, Westwood, Yorkshire.

Freessias refracta alba.—Where it is desired to have Freessias in bloom by Christmas, they may, if the pots are filled with roots, be removed from the cold frames and placed on a shelf near the glass in a house where the temperature does not fall below 45°. It is not advisable to unduly force Freessias into bloom, as they are of much better value for decorative purposes when brought into flower steadily.

Schizanthus.—Plants growing in 4-inch pots have filled their receptacles with roots, and must be afforded a shift into the pots in which they will flower, those of 6 or 7 inches in diameter being large enough. The compost should consist of coarse materials, with small quantities of manure from a spent Mushroom bed. This should be first rubbed through a fine-meshed sieve; a few pieces of charcoal added will assist in keeping the soil sweet and porous. When the plants are potted, stand them in a heated pit, as near to the glass as possible, allowing sufficient warmth from the hot-water pipes to just exclude frost. Afford ventilation on all favourable occasions, and fumigate the pits whenever aphids makes its appearance. Pinch out the top of each growth in any specimen that has a tendency to grow tall, in order to induce a bushy habit. The plants may also be stopped again during the early part of the new year. In the case of *Schizanthus retusus* and *S. Grahamii*, it is advisable to place four or six plants in each pot. Both these species are of great value for furnishing cut blooms, also for table decorations as pot plants. The *Schizanthus* is essentially a sun-loving plant, and must never be shaded, not even when in flower.

Mignonette.—Plants intended to produce a display of bloom in spring should be transferred to their flowering pots, using those of 5 or 6 inches diameter, according to the vigour of the plants. Stand them on a greenhouse shelf as near to the glass as possible. Keep the roots dry, but do not allow the plants to suffer from drought. The flower-shoots should be supported by neat stakes, twigs of Privet being suitable for the purpose.

Nicotiana glauca.—The plants are growing freely, and must be examined to ascertain if repotting is necessary. If it is intended to retain the plants in small pots for decorative purposes in the greenhouse or conservatory, they will need stimulants, liquid manure from the farmyard, given alternately with clear water, being suitable. They may remain for the present in frost-proof pits; but when the flower-spikes appear they should be placed in a cool greenhouse.

Liliums.—The plants of *L. Harrisii* have made considerable growth, and should be top-dressed with lumpy loam and peat. If they are required to bloom at Christmas, or early in January, they should be removed from the pits into the intermediate plant stove. Aphids must be kept down by fumigations or syringing with insecticides. Retarded bulbs of *Lilium auratum* and the variety *L. Melpomene* may be started into growth, under the influence of gentle warmth, to furnish a successional display of blooms.

THE HARDY FRUIT GARDEN.

By A. R. SEARLE, Gardener to the Marquis of NORTHAMPTON, Castle Ashby, Northamptonshire.

Quinces and Medlars.—The fruits of the Quince should not be gathered until they are quite ripe: they are usually ready for gathering about the last week in October, or early in November, according to the season. Quinces should be quite dry before being stored in the fruit-room, and they will become fit for use in the course of a few weeks. This fruit makes a splen-

sey, Seckle, Emile d'Heyst, Beurré Hardy, Beurré Superfin, Doyenné du Comice, Princess, Charles Ernest, St. Luke, Glou Morceau, Oliver de Serres, Marie Benoist, Easter Beurré, Doyenné d'Alençon, and Bergamot d'Esperen; (culinary) Catillac, Bellissime d'Hiver, and St. Verulam. **Plums:** (dessert) Oullin's Golden Gage, Angelina Gage, Kirke's, Coe's Golden Drop, Reine Claude de Bavay, Late Orange, and Late Transparent; (culinary) Early Prolific, Czar, Victoria, Pond's Seedling, White Magnum Bonum, Monarch, and Primate. **Peaches:** Early Alexander, Hale's Early, Dymond, Royal George, Early Alfred, Grosse Mignonne, Sea Eagle, Goshawk, and Princess of Wales. (Two varieties recently introduced and worthy of a trial are Duke of York and Peregrine.) **Nectarines:** Early Rivers, Lord Napier, Dryden, Stanwick, Elruge, Milton, and Humboldt. **Apricots:** Early Moor Park, Shipley's, Hemskerk, Moor Park, Royal, and Powell's Late. **Cherries:** Bigarreau de Schrecken, Early Rivers, Black Tartarian, Bigarreau Napoleon, Governor Wood, Noble, St. Margaret's, Late Duke, and Late Black Bigarreau; (culinary) May Duke, Kentish, and Morello.

Remarks.—Examine carefully the early-gathered fruits of Apples and Pears, and remove any that are found the least decayed. Continue to keep the leaves tied back, or removed entirely from the late-ripening fruits of Peaches and Nectarines. The fine weather of the past few weeks has been all that could be desired for the proper finishing of these fruits.



R.H.S. FRUIT SHOW.

(Photograph by H. J. Vasey.)

FIG. 124.—FIRST PRIZE COLLECTION OF SIX DISHES OF FRUIT SHOWN BY LORD BELPER.

did jelly; it is also used for mixing with other fruits in tarts, etc., to which it imparts a pleasant flavour. Medlars are generally ready for gathering about the same time as the Quince, and a dry day should be chosen, as the broad, rough, open eye holds the moisture. Medlars should be gathered carefully, and stored thinly, with the stalk upwards, as decay usually commences at that part. Medlars, also, are used for making jelly, and are sometimes appreciated raw. They are best for consumption when quite soft, and will remain eatable for a few weeks in this condition. Examine the fruits at frequent intervals.

Planting fruit trees.—As a guide in planting, I append a list of varieties of fruits that are found to do well generally. **Apples:** (culinary) Frogmore Prolific, Keswick Codlin, Lord Suffield, Stirling Castle, Golden Spire, Cox's Pomona, Peasgood's Nonesuch, Loddington Seedling, Warner's King, Lane's Prince Albert, Gascoyne's Scarlet Seedling, Ecklinville, Lady Henniker, Tower of Glamis, Alfriston, Bismarck, Bramley's Seedling, Newton Wonder, Schoolmaster, Annie Elizabeth, Dumelow's Seedling, and Northern Greening; (dessert) Beauty of Bath, Irish Peach, Mr. Gladstone, Langley Pippin, Lord Burghley, Chas. Ross, Adam's Pearmain, Rival, Scarlet Nonpareil, Ribston Pippin, Worcester Pearmain, Fearn's Pippin, and Blenheim Pippin. **Pears:** (dessert) Doyenné d'Ete, Beurré Giffard, Dr. Jules Guyot, Fondante d'Automne, Williams' Bon Chrétien, Beurré d'Amanlis, Marie Louise, Louise Bonne of Jer-

Syringing of the foliage may be discontinued after this date. It is pleasing to see the foliage so free from red spider; I have never seen the trees present a cleaner or more healthy appearance generally.

FRUITS UNDER GLASS.

By B. GOODACRE, Gardener to Sir ERNEST CASSEL, G.C.B., Moulton Paddocks, Newmarket.

Pot Vines.—Preparations may now be made for starting the young Vines to fruit early next season. The house should first be thoroughly cleansed and, if necessary, the walls should be limewashed and everything made sweet and clean. Prepare a small bed of fermenting material in the proportion of three parts leaves to one part horse manure, in which to plunge the pots. Prune the young rods to a length of about 6 feet and dress the wounds with styptic to prevent bleeding. Wash them with some good insecticide and use a sponge, handling it carefully to avoid injuring the buds. Remove a little of the surface soil, and replace this with fresh compost in which is incorporated a good sprinkling of bonemeal. Before moving them indoors apply a thorough soaking of clear lime water to eradicate any worms present in the pots. As soon as the Vines have been placed in their proper positions in the house, the young canes may be tied down so that the tips of the rods will be level with the pots. Syringe them once or twice daily according to the weather, and otherwise maintain a moist atmosphere. Little fire heat should be necessary for some time, as

in the absence of severe weather the gentle warmth arising from the hotbed will be sufficient to prevent the thermometer falling below 45°. As there is always a percentage of young rods which fail to "break" satisfactorily so early in the season, it is advisable to start a few more than are actually required to cover the trellis in order that a few of the worst may be discarded when it is seen which have started well.

Early permanent Vines.—The Vines to be forced in succession to those in pots ought to be pruned at once. After pruning cleanse the rods thoroughly with soap and warm water and dress them with an insecticide, working it well into the older parts of the stem with a soft brush. Wash the woodwork, glass, trellis, &c., with soap and warm water, limewash the walls, and after attending to the border, give the hot-water pipes a coating of linseed oil and lamp black. If the border has not been top dressed this may now be done. Remove all the loose and inert soil on the surface, and apply a top dressing of artificial manure, pricking it lightly in with a fork, after which a few inches of fresh compost may be put on and tramped or beaten quite firm. When all the cleaning is complete, open the door and ventilators wide for a few weeks, or until it is

transplanted with ease. A supply of plants for this purpose should be raised annually from cuttings or layers, and grown through the summer months in an open position by themselves.

Evergreens.—The value of planting evergreens in the pleasure grounds and borders is now widely recognised. A free use should be made of them, in addition to deciduous shrubs, when forming shrubberies of any description. But unless they are planted as screens, I do not advocate a too free use of them, as too many give a sombre appearance at all seasons; when, however, they are planted in moderation, they associate and harmonise well with flowering shrubs and others of a deciduous character; whilst, as isolated specimens on lawns, they are very effective, especially the pendulous forms. A particularly useful and conspicuous evergreen in flower now is *Arbutus Unedo*, the Strawberry tree. There are several varieties of this species worthy of cultivation, including *coccinea*, *Croomii*, *magnifica*, *Rollisonii*, and *rubra*. *Azara microphylla* is a beautiful evergreen, with deep, lustrous, shining leaves; when in flower, its small, deliciously-fragrant flowers are very attractive. The many varieties of *Berberis* are both interesting and attractive, especially when grown as isolated specimens.

gathered will, in many instances, have germinated freely. The seedlings require pricking-out into boxes filled with finely-sifted, sandy soil, and should be afforded the protection of a cold frame. The frame ground will need attention. Thoroughly wash the glass of all frames. Plants in frames should be plunged or placed together as thickly as possible, now that growth has finished, so that full use may be made of the space. Give an abundance of air to Violets in frames, remove yellow leaves, and stir the surface of the soil. Overhaul the herbaceous borders, removing as many as possible of the untidy growths.

THE KITCHEN GARDEN.

By JOHN DUNN, Kitchen Garden Foreman,
Royal Gardens, Windsor.

Lettuce.—Lettuce sown early in September should be ready for planting in some sheltered situation, to remain throughout the winter. If the plants can be grown successfully through the winter, they will be valuable at a time when good salads are scarce. Well-prepared land, on a south or west border, should be chosen for them, and a distance of 12 inches each way allowed the plants. The soil should be of a rather sandy nature, and the border well raised at the back. It is important that the plants should be put out without delay, so that fresh roots may be made before very cold weather sets in. Sparrows are so troublesome to this crop in spring that we are forced to employ nets as a protection. If any cold frames are available, they should be filled with Lettuces from the open border before the plants are damaged by frost. They should be taken up with a good ball of soil attached to the roots, and well watered after planting, so that they experience very little check in transplanting. Lettuces treated in this manner will be less likely to suffer from damping than if left in the open until they are fully developed, and then lifted. Decayed foliage should be carefully removed, and the lights kept off the frames until frost is imminent.

French Beans.—French Beans in pits should be given frequent waterings of liquid manure and an abundance of fresh air both night and day while mild weather lasts. Pick the pods as soon as they are large enough, whether they are required for immediate use or not, or the plants may become exhausted before their season is over. Surplus pods may be kept fresh for a few days if placed on a clean slate in a cool cellar. Another sowing may be made now to produce a few dishes of Beans through December. Pots of a diameter of 7 inches are large enough for this sowing. An atmospheric temperature of 60° at night-time will be suitable. As soon as the plants are a few inches high, syringe them freely with clear water in order to promote a clean, healthy growth. Plants in pots raised from seeds sown a month ago should be given liquid manure. The plants should be kept as near to the glass as possible so that they may not become spindly.

Late Cauliflower.—The heads should not be allowed to remain uncovered and exposed to the weather, or their value may be considerably lessened. The usual method of protection by placing a few of the plants' own leaves carefully over each head will be sufficient to keep off a few degrees of frost, and will also suffice to protect the curds from strong light.

Autumn Broccoli.—Owing to the mildness of the season, the plants are "turning in" earlier than usual, and, in order to keep up a supply as long as possible, some of them may be lifted with a good ball of soil and replanted at half their usual distance apart, taking care that a covering of some kind is at hand to be applied in case of frost. By lifting some of the plants carefully when the heads are about the size of a hen's egg, the supply of Broccoli may be kept up for some time after the ordinary crop is over. At Frogmore, we lift a great many plants in this manner each autumn. Be careful to lift the plants with a good ball of soil. Clean mats will provide a suitable protection against frost.

Herbs in pits.—Give an abundance of fresh air to Marjoram and other herbs growing in pits, as a stagnant atmosphere must be avoided as far as possible, to prevent injury from damping.

Mustard and Cress.—Seeds may be sown weekly in heated pits. If a small supply is only necessary. Mustard and Cress may be grown in boxes; but the seed boxes should be placed in a heated pit or house.



R.H.S. FRUIT SHOW.

(Photograph by W. J. Casey.)

FIG. 125.—PEAR "DOYENNÉ BOUSSOCH," AWARDED THE FIRST PRIZE IN THE SINGLE-DISH CLASS "FOR ANY OTHER EARLY VARIETY."

necessary to close the house for starting. A short time before this takes place a heap of leaves and manure should be collected, and turned once or twice to sweeten in readiness to place inside.

THE FLOWER GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS,
Aldenhall House, Hertfordshire.

Shrubs for bedding.—There are many species and varieties of shrubs that are well suited for use as small specimens for bedding purposes during the winter months. Some are specially fitted for planting in borders in shady and damp positions, presenting, when arranged judiciously, a pleasing and bright effect. Evergreens may be largely used for this purpose, including varieties of Holly, Aucuba, Berberis, Ivy, Box, *Choisya ternata*, *Cotoneaster*, *Daphne laureola*, *D. purpurea*, *Cassinia fulvida*, *Euonymus*, Lavender, *Phillyrea*, Rosemary, *Ruscus*, *Skimmia*, *Veronica*, Gorse, and *Vinca*. Small plants of deciduous subjects might be interspersed, and, of these, varieties of Willow and Cornus, *Forsythia suspensa*, *Populus alba* var. *Bolleana*, and *Spiraea Douglasii* are suitable; whilst all of those named may be

Bupleurum fruticosum forms a compact, rotund bush, and produces umbels of yellow flowers. *Castanopsis chrysophylla*, commonly known as the golden-leaved Chestnut, is a beautiful, hardy shrub, with deep, glossy, green leaves that are golden on the reverse side. There are many interesting varieties of *Prunus Laurocerasus*, such as *camelliaefolia*, *latifolia*, and *schipkensis*. *P. lusitanica azorica* is also a fine-foliaged evergreen. *Colletia cruciata*, with its curious spiny growth, makes a fine evergreen in a sheltered position. Others that are suitable include *Cotoneasters* in variety, *Desfontainia spinosa*, with its Holly-like foliage; *Cassinia fulvida*, with pretty golden reverse to the leaves; *Hymen-anthera crassifolia*, Hollies in great variety, *Olearia*, *Phillyrea*, *Osmanthus*, *Raphiolepis japonica*, *Photinias*, *Pittosporum*, *Rosmarinus officinalis* and its variety *alba*, *Ruscus aculeatus* (a fine subject for planting under trees), *Skimmias*, and *Veronica Traversii* and *V. ligustrifolia*. The foregoing list includes those only that would be found both useful and hardy, and is by no means comprehensive.

General remarks. Seeds of *Delphiniums* and other subjects that were sown as soon as

EDITORIAL NOTICE.

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Special Notice to Correspondents.—The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

Letters for Publication, as well as specimens of plants for naming, should be addressed to the EDITORS, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Illustrations.—The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens or of remarkable plants, flowers, trees, &c., but they cannot be responsible for loss or injury.

Local News.—Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editors to see.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, OCTOBER 24—
Nat. Chrys. Soc. Floral Com. meet.

TUESDAY, OCTOBER 25—
Roy. Hort. Soc. Coms. meet. (Lecture at 3 p.m. by Professor Henslow, on "Life, a Director of Forces in Development and Evolution.")

WEDNESDAY, OCTOBER 26—
Herefordshire Fruit, Root, Grain, and Chrys. Soc. Sh. (2 days). Croydon Chrys. Sh. (2 days).

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich—47.6°.

ACTUAL TEMPERATURES.—
LONDON.—Wednesday, October 19 (6 p.m.): Max. 57°; Min. 50°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, October 20, (10 a.m.): Bar. 29.7; Temp. 50°; Weather—Slight rain.

PROVINCES.—Wednesday, October 19: Max. 53° Cornwall; Min. 46° Yorkshire.

SALES FOR THE ENSUING WEEK.

MONDAY, TUESDAY, WEDNESDAY, THURSDAY, AND FRIDAY—
At 67 & 68, Cheapside, E.C., Dutch Bulbs by Protheroe & Morris, at 10.30.

MONDAY, TUESDAY, AND WEDNESDAY—
Sale of Nursery Stock, at Womersley Nurseries, Shamley Green, near Guildford, by Protheroe & Morris, at 12.

WEDNESDAY—
Azaleas, Rhododendrons, Palms, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris.
Nursery Stock in variety at Putney Nursery, Hazelwood Road, Putney, by Protheroe & Morris, at 12.

THURSDAY AND FRIDAY—
36th Great Annual Sale of Nursery Stock at Hollamby's Nurseries, Groombridge, near Tunbridge Wells, by Protheroe & Morris, at 11.30.

FRIDAY—
Imported Cattleya Dowiana, also Choice Established Orchids, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

The International Exhibition.

There is a fairly general consensus of opinion that the International Exhibition of 1912 should not only be distinguished by the finest horticultural display that this country has ever seen, but also that the Exhibition should mark a stage in the progress of horticulture by serving as the occasion for a congress of horticulture at which subjects of importance should be discussed. On the general question of such a congress we hope to have something to say later on; but for the present we wish to confine ourselves to a subject which, as we think, ought to be considered exhaustively and dispassionately by the body of experts who may be expected to assemble on the occasion of the Exhibition.

The subject in question is the practice which

is being adopted all the world over of prohibiting the importation of this or that kind of plant for fear of the simultaneous introduction of pests which afflict the vetoed plant. Of the prevalence of prohibitive legislation all horticulturists have large experience. Only last week we published the terms of the embargo placed on the importation of vines into South Africa. In order to keep out *Phylloxera* the Government of South Africa, acting, no doubt, on the advice of the Department of Agriculture, bans the introduction of Vines, and, incidentally, closes by a stroke of the pen a market for one kind of horticultural produce. We cite this example, not because of its intrinsic importance, but because it happens to be the most recent. Instances of a similar nature could, of course, be multiplied almost indefinitely. Moreover, it is certain that the fashion of which we have given an example is likely to continue. Once accustomed people to the idea that a pest is likely to prove seriously detrimental to a given crop and they will acquiesce readily in the exclusion of plants of the kind attacked by the pest. Thus the man of foresight sees on all sides barriers rising up to protect this or that country and to exclude foreign horticultural produce. Free exchange of horticultural commodities will in consequence be more and more impeded as each country surrounds itself with a rising wall of prohibition. The time is ripe for a consideration by horticultural experts of the question whether this fashion of prohibition is wise or not. By this we mean whether the growing practice of exclusion of plants in order to secure immunity from pests is, after all, sound from a scientific standpoint. Should the consensus of informed opinion declare itself in favour of the practice, then, no matter how strongly prohibitive measures may be deprecated on general grounds, they must be accepted, and horticulturists must shape their courses with reference to this trend of custom. Should, however, a full and free discussion on the subject disclose grave reasons why these legislative prohibitions are unscientific as well as undesirable, we may be confident that it will not be without due and important effect on this custom. Inasmuch as our present object is to propose to the executive committee of the International Exhibition that a congressional consideration should be given to the growing custom of legislative prohibitions with respect to horticultural objects, it would be manifestly unfair at this juncture to express an opinion as to the probable outcome of such deliberations. Nor would it be discreet to endeavour now to anticipate the arguments which are likely to be used for and against this practice of modern Governments. For the time being, therefore, we do not wish to promote a discussion of this question, but if our proposal commends itself to those of our readers who are interested in the subject, we shall be pleased to be informed of the fact.

We endeavour—with what success our world-wide circle of readers must judge—to hold the balance even between the practical and scientific aspects of horticulture. This is the sole means by which the true interests of horticulture may be advanced. But a practice is not necessarily good, even though it is followed by a man utterly ignorant of science. Nor is a practice necessarily good even though it is advocated by the contemporary representatives of science. Science, like practice, ad-

vances over the dead bodies of its previous errors. What is all-important is to examine from time to time current practice and current scientific doctrine in order to let in the fresh air of criticism and to eradicate the weeds of error which are bound to be found growing side by side with the true plants—of science and practice—which we all desire to cultivate. Our proposal is, therefore, that there should take place in connection with the International Exhibition a congressional consideration of the question whether legislative enactments prohibiting the importation of plants are calculated to serve the permanent interests of horticulture. We suggest, further, that, in the event of our proposal being adopted, a full report of the conference should be published.

ROYAL HORTICULTURAL SOCIETY.—The Royal Horticultural Society has arranged for the following trials to be made at Wisley in 1911-1912:—**FRUIT:** Strawberries and Raspberries, autumn fruiting (these trials will be continued). **FLOWERS:** Fuchsias for bedding and for the conservatory (two plants of each to be sent early in March); Begonias (fibrous), including summer and winter-flowering, and bedding varieties (two plants of each to be sent in March); Delphiniums (two plants of each in February); Dahlias (decorative), introduced into commerce since January 1, 1908 (two plants of each in May); Primulas (hardy), for borders and rock-work (three plants of each in February). **VEGETABLES:** Carrots (½ ounce of each early in February); Cucumbers (six seeds of each in February); Peas (½ pint of each early in February); Cabbages, Savoy (one packet of seed of each in March); Potatoes ("mid-season" and "late") (each variety must be labelled as being "mid-season" or "late"; 20 tubers of each to be sent by February). Everything sent for trial must be named, and the name and address of the sender attached. If sent by post the address should be, The Superintendent, R.H.S. Gardens, Wisley, Ripley, Surrey; if sent by rail, The Superintendent, R.H.S. Gardens, Wisley, Horsley Station, L. & S.W.R., with advice by post to the Superintendent, W. WILKS, Secretary, R.H.S.

—The next meeting will be held in the Society's Hall, Vincent Square, Westminster, on Tuesday, October 25. At the 3 o'clock meeting in the lecture room the Rev. Professor G. HENSLOW, V.M.H., will give an address on "Life—a Director of Forces in Development and Evolution."

THE R.H.S. VEGETABLE SHOW.—This exhibition will be held on October 25, in conjunction with the usual fortnightly meeting in the Society's Hall, Westminster. The show is restricted to amateurs. The principal class is for a collection of 12 kinds, distinct, to be selected from a published list. The 1st prize embraces the Sutton Challenge Cup (value £21), and £10 in money. There are other smaller classes for collections, also for Potatoes, Onions, Salads, and 30 single-dish classes.

FLOWERS IN SEASON.—Mr. FREDERICK ROEMER sends us from Quedlinburg, Germany, inflorescences of a variety of *Statice sinuata* with blooms of a rose tint, rather deeper than we have observed before. The variety is named *rosea*.

THE SURVEYORS' INSTITUTION.—The first ordinary general meeting of the session 1910-1911, will be held on Monday, November 14, 1910, when the president, Mr. LESLIE ROBERT VIGERS, will deliver the opening address. The chair will be taken at 3 o'clock.

CHRYSANTHEMUMS AT WISLEY.—A sub-committee of the Royal Horticultural Society visited the Wisley Gardens on September 15, and recommended Awards of Merit, which have been confirmed by the Council, for the following Chrysanthemums: To Messrs. WELLS, of Merstham, for Elaine, and to Messrs. DOBBIE, of Rothesay, for Abercorn Beauty, Flora, Miss Balfour Melville, Mr. Selby, Nina Blick, and Leslie. A sub-committee also visited the Wisley Gardens on September 29 last, and recommended Awards of Merit, which were confirmed by the Council on October 12, for the following Chrysanthemums:—Diana, Market White, Mrs. A. Thompson, Polly, Tapis de Neige, Féé Japonaise, Perle Chatillonnaise, and Provence. These were sent by Messrs. DOBBIE & Co., Edinburgh. Also Diana, Cecil Wells, and Gatton, sent by Messrs. WELLS, of Merstham.

TRIALS OF DAHLIAS AT WISLEY.—Awards of Merit have been recommended by a sub-committee, and confirmed by the Council of the Royal Horticultural Society to Dahlia Grenadier, sent to Wisley by Messrs. HOBBS, LTD., Dereham; Hohenstanfen, sent by Mr. PFITZER, Stuttgart, Germany; and S. T. Wright, sent by Messrs. BAKERS, Codsall and Wolverhampton.

NATIONAL HARDY PLANT SOCIETY.—We are informed that a meeting of the provisional committee of the National Hardy Plant Society was held at the Royal Horticultural Society's Hall, Vincent Square, on Thursday, October 13; Mr. MACSELF in the chair. Rules and by-laws were adopted, subject to approval by a general meeting of the Society, which will be held on Thursday, November 3, at 3 p.m., at the Hotel Windsor, for this purpose, and for the election of officers and council for the ensuing year.

NATIONAL FRUIT AND CIDER INSTITUTE.—The report of Messrs. B. T. P. BARKER and J. ETTLE on the work of this institution during 1909 is interesting, chiefly by reason of the account given of the testing of various ciders and perry with the object of classifying them and determining their qualities and values for blending, &c. Other subjects dealt with in the report include the much-discussed question of the effect of grass on the growth of orchard trees. From trials made at Long Ashton, and summarised in the report, the average growth of young Apple trees planted in grass as compared with that of similar varieties in land cultivated within 9 feet of the trees was, in the course of four years, as 198:218. The conclusion drawn by Messrs. BARKER and ETTLE is that the deleterious effect of grass manifests itself during the early stage of the life of the tree, and they recommend, therefore, that the land should be cultivated for the first two years after planting.

"THE BOTANICAL MAGAZINE."—The issue of this publication for October contains illustrations and descriptions of the following species:—

BETULA MAXIMOWICZII, tab. 8337.—This fine Birch was discovered by the late Mr. MAXIMOWICZ in the Island of Yezo, in Japan. Seeds were sent to England by the late Mr. J. H. VEITCH, and seedlings raised from this consignment were distributed. The leaves are especially large for a Birch, and resemble those of certain of the Limes.

ROSA MOYESII, tab. 8338.—The species as presented in the *Botanical Magazine* plate appears very striking, a small spray having six bright red single flowers and several unopened buds. The fruits also are a brilliant red. R. Moyesii was collected on the mountains of Szechuan, China, by E. H. WILSON, and the illustration in the

Botanical Magazine has been prepared from a plant in Messrs. JAMES VEITCH & SON'S nursery at Coombe Wood. The flowers appear to be variable in colour, for Mr. HEMSLEY remarks that another form exists with paler flowers. The plants at Coombe Wood are about 6 feet to 8 feet high, so that in gardens this species would, no doubt, be classed with the Ramblers.

STYRAX HEMSLEYANUS, tab. 8339.—This also is a Chinese species, first discovered by Dr. A. HENRY and subsequently by Mr. WILSON, who sent home seeds, from which plants were raised in the Coombe Wood Nursery. These flowered in June, 1909. The flowers are produced in long racemes; the petals are white, and the stamens form rich, yellow clusters. The leaves are of a pale, bright-green colour. *Styrax Hemsleyanus* forms a tree of about 20 feet to 30 feet high, and has a peculiar white bark.

IRIS WILSONII, tab. 8340.—As the specific name indicates, this is another of Mr. WILSON'S introductions whilst collecting for Messrs. JAMES VEITCH & SONS. The perianth tube is green, with the outer segments veined with purple on a pale yellow ground; the inner segments are pale yellow. There appear to be several forms of I. Wilsonii, and one has been distinguished as the variety major. Mr. GEORGE FORREST has collected on the Tali Range an Iris with bright purplish-blue flowers, which in other respects greatly resembles I. Wilsonii.

PRIMULA LITTONIANA, tab. 8341.—P. Littoniana is one of Mr. GEORGE FORREST'S introductions from China whilst collecting for Messrs. BEES LTD. The species was figured and described in *Gardeners' Chronicle*, July 10, 1909. The colours in the *Botanical Magazine* plate do not happily illustrate this most remarkable species.

ERRATA.—In the paragraph in last issue on the "Average Cost of Painting Greenhouse," in "1½ cwt. putty" read "½ cwt.," and on line 13, for "painting" read "pointing."

FLOWER GARDENING AT BATTERSEA.—With a view to encouraging the cultivation of flowers and plants by the tenants of the houses and tenements numbering 351 on the Latchmere and Town Hall Estates, the Battersea Borough Council arranged for the seventh consecutive year competitions for the best displays of outdoor and indoor flowers. The prizes and certificates obtained by the exhibitors in the several classes will be presented by the Mayoress (Mrs. P. P. HAYTHORNTHWAITE) at a public meeting to be held in the Small Hall, Latchmere Road Baths (Burns Road entrance), on Friday, the 28th inst.

BRITISH FERN SOCIETY.—This society may be said to have had its origin in 1891, when a society was formed at Kendal with the object of bringing together the local lovers of our native Ferns, and particularly those who devoted themselves to the search for varietal forms and their improvement by selective culture. The society was named at the outset the Northern British Pteridological Society, but it speedily became important, and the name was altered to the British Pteridological Society. For various reasons, however, the membership afterwards declined, and attempts to hold meetings in the south fell through, and two meetings fixed in Ireland were almost failures. But the establishment of a quarterly journal, under the Editorship of Mr. CHAS. T. DRUERY, has resulted in a largely-increased membership, which amounts at the present time to 130. The subscription, as hitherto, is 5s. per annum, entitling to membership and four issues of the *Gazette*. The secretary is Mr. C. T. DRUERY, 11, Shaa Road, Acton.

APPLE SOLD FOR FOURTEEN GUINEAS. The remarkable price of 14 guineas was obtained for a single fruit of Apple Gloria Mundi in Covent Garden Market by Messrs. GARCIA JACOBS & SON, salesmen. The weight was declared to be 27 oz., and the fruit had a circumference of 16 inches and a height of 5 inches. The purchasers were Messrs. ADAMS & Co., of Bond Street, who secured the fruit after spirited bidding at public auction, which opened with a bid of £1. We may observe, however, that this fruit does not constitute a "record" for weight; for in our record book we find the following:—"1888 (Apples) a fruit of Warner's King, shown by Mr. ROBT. SMITH at the Ledbury Show, weighed just over 2 lb."

TROPICAL FRUITS RIPENING AT NICE.—According to a note in *Le Jardin* (October 5, 1910), Mr. ROBERTSON-PROSCHOWSKY has succeeded in obtaining from plants grown in the open ripe fruits of *Passiflora edulis* (Passion fruit), *Psidium Cattleianum* (Guava) and *Opuntia gymnocarpa*, all three of which are of tropical or sub-tropical origin. Since these fruits are much esteemed delicacies, and since they grow readily and without any particular attention at Nice, it is probable that their cultivation will be undertaken in favoured localities in the Riviera. The case of *Passiflora edulis* is particularly promising, inasmuch as its fruits suffer considerably during the long passage to Europe. It is stated that the fruits of the Argentine species *Opuntia gymnocarpa*, produced at Nice, are much superior to those of *Opuntia ficus indica*. Inasmuch as, on the comparatively rare occasions when these several fruits appear on the market in London or Paris, they meet with a ready sale, it is certain that if they can be grown in the Riviera, the fruits are assured of a market.

PEAR LEAF BLISTER MITE.—Leaflet No. 239 of the Board of Agriculture deals with *Eriophyes pyri*, the Pear-leaf blister mite, which pest appears to have increased considerably during the past few years. The mite attacks the foliage chiefly, though occasionally the young fruits are also damaged, and though the Pear is the chief sufferer from this pest, the Apple, White Beam, Wild Service tree and Mountain Ash are also liable to receive attention from it. The symptoms by which the work of the mite may be recognised are raised patches or blisters on the leaves, each with a minute opening on the under side. The patches or blisters are red, green-red or green, becoming later brown or brown-black. The mite itself is extremely small, some 1-125th of an inch in length. It passes the winter under the outer scales of the buds on the shoots of the current year, and commences its galling operations in the spring. In addition to collecting and burning affected leaves, the leaflet recommends spraying with paraffin emulsion, e.g., the Woburn Paraffin Emulsion (see leaflet 70) in January or February. American experience points to the efficacy of lime-sulphur-caustic soda wash, applied when the trees are dormant. The formula for this wash, recommended by THEOBALD, is as follows: Lime 30 lbs., flowers of sulphur 30 lbs., caustic soda 10 lbs., soft soap 10 lbs., water 100 gallons. To prepare it, make the flowers of sulphur into a paste with water, and pour it over the lime. Boil the mixture for quarter of an hour, and add the caustic soda. Boil for a short time, add the dissolved soap and make up to 100 gallons. Nurserymen are recommended to disinfect their young stock whilst in a dormant condition with hydrocyanic acid gas. The method of use of this insecticide may be found in our pages (see *Gardeners' Chronicle*, April 7, 1906, p. 220), and also in Leaflet No. 188 of the Board of Agriculture.

Exhibition of British-Grown Fruits.



OCTOBER 13, 14.

THE earlier of the autumn fruit shows of the Royal Horticultural Society were undoubtedly the finest of the series. We refer to those that took place at the Crystal Palace, Sydenham; since they have been held in the Society's Hall at Westminster, interest has appeared to wane, and last season the exhibition was allowed to drop. This year it was held again, and resulted in an average display.

Although several classes are provided for Grapes, these fruits are seldom very remarkable at these shows, and on this occasion they were scarcely up to the average. The schedule also makes provision for Plums, Nectarines, Cherries, and other soft fruits, but the season is too late for these, and they might well be eliminated. The show of Apples and Pears is always a fine one, and this year, notwithstanding the general scarcity of these fruits, they were as good or even better than ever. We were impressed with the high colour generally of the Apples, and they appeared to be remarkably free from fungous pests, which fact points to a more general use of washes and sprays. The large exhibits made by nursery firms were as good as we have ever seen them, and some little attempt was made to render the exhibits attractive from a spectacular standpoint. But when the most has been done in this direction, the results fall far short of an ordinary flower show, so that the general public vouchsafes only a scanty patronage. Even on the first day, visitors, apart from exhibitors and others professionally interested, were very few. Two displays of fruit trees in pots were staged, and served to break the monotony of the numerous flat dishes and baskets. The Fruit and Vegetable Committee met on the morning of the first day and recommended two Awards of Merit, one to the well-known Peach Salwey, the other to a variety of culinary Apple. The arrangements were admirable, all the classes being placed in proper sequence, so that it was an easy matter to find an individual exhibit. For the courtesy and help rendered by the superintendent, Mr. Wright, and also by the secretaries and the other members of the staff at Westminster, the thanks of all concerned are due.

AWARDS OF MERIT.

Apple Hounslow Wonder (fig. 127).—This is a culinary variety said to have been raised from Dumelow's Seedling, which is often known as Wellington. The skin is mellowish-yellow, heavily flushed with red next to the sun. There is a certain resemblance to the variety The Queen, especially in the "eye," but it is not so flat a fruit as that variety. The flesh is crisp, juicy, and very solid. The tree is said to be a good cropper, and not liable to canker. The fruits keep in good condition until March. Shown by Messrs. SPOONER & SONS, Hounslow.

Peach Salwey.—This old variety is well known, and was shown in splendid condition by the Duke of RICHMOND from his garden at Goodwood. The skin is of a deep, rich yellow colour. In the *Fruit Manual* the flesh is described as of a deep orange colour, very melting, juicy, and vinous. It was raised by Col. Salwey from a Peach stone brought from Italy, and was introduced by Mr. Charles Turner, of Slough.

DIVISION I.

COLLECTION OF HOTHOUSE AND HARDY FRUITS. (OPEN TO GARDENERS AND AMATEURS ONLY.)

Two classes are provided in this section for displays of ripe dessert fruits, either from hot-houses or the open garden. The largest is for a collection of nine kinds, only one Melon or Pine, or one dish of a Black or White Grape being allowed, and not more than two varieties of any other kind. The 1st prize consists of a silver cup and £5 in money.

There were only two exhibits, and neither was remarkable for high quality. The exhibitors were C. A. CAIN, Esq., The Node, Welwyn, Hertfordshire (gr. Mr. T. Pateman), and J. A. Nix,

Esq., Tilgate, Crawley, Sussex (gr. Mr. E. Neal); the 1st prize falling to the former and the 2nd to the latter exhibitor. The best Grapes were Muscat of Alexandria in the 1st prize group. The berries were finely finished and of deep amber colour, but the bunches were not remarkable for either size or shape. Mr. CAIN showed Black Alicante as his other variety of Grape; he had in addition a moderately good Melon of the Hero of Lockinge variety; Peach, Lady Palmerston; Plum, Coe's Golden Drop, of small size; Pears, Pitmaston Duchess and Beurré d'Amanlis, the former showing some rubbing of the exterior; and Apples, Duchess's Favourite and Cox's Orange Pippin, the latter being one of the finest dishes in the collection. Mr. NIX lost heavily for Grapes, his bunches being much below best exhibition size; but Nectarine Peach was splendid, also Pear (Doyenné du Comice) and Apple (James Grieve).

In both cases Ampelopsis sprays and leaves were employed for decoration.

Collection of six dishes.—In the smaller class for a collection of six dishes, to include at least four kinds, only one Melon and one variety of white and black Grapes each being allowed, the quality was infinitely superior. Competition also was keener, there being four exhibitors. The 1st prize was awarded to Lord BELPER, Kingston Hall, Derby (gr. Mr. W. H. Cooke). The Grapes were Gros Colman and Muscat of Alexandria. The two bunches of the former were amongst the finest in the show for size of berry and finish. The Muscats were well matched, being long, tapering bunches without shoulders, and the berries were well finished. The other dishes were Cox's Orange Pippin Apple, of superb quality and highly coloured; Melon Eminence, Pear Doyenné du Comice; and Peach Gladstone, the last of excellent quality.

The 2nd prize exhibit, shown by the Duke of NEWCASTLE, Clumber, Worksop (gr. Mr. S. Barker), was also a remarkably fine display. The two bunches of Madresfield Court Grapes lacked nothing but size. Though a trifle under weight, they were otherwise perfect specimens. Pears (Pitmaston Duchess) were very large, and the Melon Sutton's Scarlet was a superb fruit.

The two other exhibitors were Sir C. E. HAMILTON, Bart., Hatley Park, Sandy (gr. Mr. T. W. Birkinshaw), and H. ST. MAUR, Esq., Newton Abbot (gr. Mr. G. Richardson), the exhibits being adjudged equal in merit and awarded equal 3rd prizes. Sir C. E. HAMILTON had large bunches of Grapes, those of Alnwick Seedling being of fine colour, but uneven in berry. Mr. ST. MAUR had a fine Melon, of the variety Superlative.

GRAPE CLASSES.

Taking the Grape classes as a whole the exhibits were distinctly below the average for these shows, and this notwithstanding the fact that these exhibitions have never been strong in Grapes. There were no competitors in the largest class for a collection of five varieties, two bunches of each sort, whilst in that for four varieties there was only one collection. It was shown by A. BENSON, Esq., Upper Gatton Park, Mersham (gr. Mr. H. Cornish), and received the 2nd prize. The varieties were Madresfield Court, Muscat of Alexandria, Mrs. Pearson and Mrs. Pince.

Black Hamburgh.—There were two exhibits of this popular kind, and well-coloured but small berried bunches shown by Lord HILLINGDON, Sevenoaks (gr. Mr. J. Shelton), gained the 1st prize; 2nd, J. A. NIX, Esq., Tilgate (gr. Mr. E. Neal).

Mrs. Pince.—Three stands of this variety were forthcoming, much the best examples being shown by Lord HILLINGDON, who was awarded the 1st prize; 2nd, H. ST. MAUR, Esq.; 3rd, G. MILLER, Esq., Newberries, Radlett, Hertfordshire (gr. Mr. J. Kidd). Mr. MAUR's bunches were the largest, but they were not nearly so well coloured as those from Lord HILLINGDON's garden.

Black Alicante.—This class was one of the best in the Grape section. There was good competi-

tion, and the quality ran fairly uniform throughout. The 1st prize was awarded to the Duke of NEWCASTLE (gr. Mr. S. Barker), the berries being the largest and finest coloured; the 2nd prize was won by W. G. RAPHAEL, Esq., Castle Hill, Englefield Green (gr. Mr. H. H. Brown), the bunches being well matched, large, and only deficient in size of berries; 3rd, Sir WALPOLE GREENWELL, Bart., Marden Park, Surrey (gr. Mr. W. Lintott).

Madresfield Court.—There were four exhibits, one being so much superior to the others as to bear no comparison. The exhibitor was the Duke of NEWCASTLE (gr. Mr. Barker). The bunches were not of extra large size, but they were well matched and perfectly finished; 2nd, Lord BELPER (gr. Mr. W. H. Cooke); 3rd, G. MILLER, Esq. (gr. Mr. J. Kidd).

Prince of Wales.—The only exhibit of this variety was shown by the Duke of PORTLAND, Welbeck Abbey, Worksop (gr. Mr. J. Gibson) and was awarded the 1st prize.

Any other black Grape.—There were four exhibits in this class, the 1st prize being awarded to Gros Guillaume, shown by the Duke of NEWCASTLE; 2nd, Appley Towers, shown by C. A. CAIN, Esq. (gr. Mr. T. Pateman). The two bunches of Gros Guillaume were large, even for this big-growing sort, and the berries were as well finished as it is usual to find in this variety.

Muscat of Alexandria.—The Grapes in this class all showed rich amber colouring, pointing to good quality, and although no individual exhibit was outstanding, the quality generally was good. The 1st prize was won by L. G. PIKE, Esq., Wareham, Dorset (gr. Mr. W. D. Pope); 2nd, G. MILLER, Esq. (gr. Mr. J. Kidd); 3rd, A. BENSON, Esq. (gr. Mr. H. Cornish).

Any other white Grape.—This proved a poor class. Foster's Seedling, shown by Sir CHAS. E. HAMILTON, Bart. (gr. Mr. T. W. Birkinshaw), being awarded the 2nd, and Mrs. Pearson, shown by A. BENSON, Esq. (gr. Mr. H. Cornish), the 3rd prize, these being the only exhibitors.

COLLECTION OF HARDY FRUITS.

This class was for 30 dishes, distinct, arranged in a space of 12 feet by 3 feet. Three exhibitors competed, their displays including a selection of hardy fruits of nearly all kinds, as well as nuts, the intention being to make the collections as varied as possible. The 1st prize was won by Lieut.-Col. A. C. BORTON, Cheveney, Hunton, Kent (gr. Mr. J. Whittle). His Apples and Pears were splendid, and he had also fine Quinces, Peaches, Blackberries, Nuts, and Damsons. Of the Apples, Allington Pippin, Wealthy, Bramley's Seedling, Bismarck, and Cox's Orange Pippin were especially good; Walburton Admirable and Princess of Wales Peaches were also choice samples. 2nd, Major POWELL-COTTON, Quex Park, Thanet (gr. Mr. T. Cornford). Here again Apples and Pears were very good, Withington Fillbasket Apple being remarkably large and good in colour. Golden Noble is a grand culinary Apple and was finely shown by Major POWELL-COTTON. Prince of Wales and Late Admirable Peaches, Victoria Nectarines, Mulberries, Brown Turkey Figs, and Nuts formed other dishes in this admirable collection. 3rd, Sir MARCUS SAMUEL, Maidstone (gr. Mr. W. H. Bacon), with a meritorious exhibit.

DIVISION II.

NURSERYMEN'S CLASSES.

FRUITS GROWN ENTIRELY OUT-OF-DOORS.

There are no traders' exhibits at this fruit show, except such as are seen in competitive classes. These are divided into four, the largest class being for a display of hardy fruits occupying a space of 30 feet run, and the smallest for 6 feet, thus making provision for the small as well as the large growers.

In the largest class there were four collections, Gold Medals being awarded to two exhibits and Silver-gilt Medals to the others.

Messrs. GEO. BUNYARD & CO., LTD., Maidstone, showed fruits of fine quality arranged on dishes, stands of varying heights and metal displays, a few plants of *Cratægus Pyracantha* being interspersed for relief. The fruits showed rich

colours, were well graded as to size, and had generally unblemished skins, denoting choice quality. Amongst Apples, especially good were Baumann's Red Reinette, Bountiful, Bramley's Seedling, Royal Jubilee, Lord Castlereagh, Queen Caroline, Mere de Menage, Golden Spire, Lady Sudeley, Ben's Red, Warner's King, Wealthy, Withington Fillbasket, King of the Pippins, Allington Pippin, and Golden Noble. (Gold Medal.)

The KING'S ACRE NURSERIES, Hereford, had a very imposing display, well set up, the coloured varieties being exceptionally richly coloured. Very fine were Apples Chas. Ross, Rival, Warner's King, Stirling Castle, Golden Noble, Cox's Pomona, Beauty of Stoke, Bismarck, Hambling's Seedling, King's Acre Bountiful, Wealthy, and Lord Grosvenor. Along the front were Medlars, Strawberries of the St. Joseph variety, Peaches, Coe's Golden Drop Plums, Nuts, and Pears. (Gold Medal.)

The exhibit shown by Messrs. H. CANNELL & SONS, Swanley, Kent, was very bright, and the arrangement pleasing, whilst the fruits were free from blemish. Notable dishes of Apples were King of the Pippins (extra fine), Cox's Orange Pippin, Wealthy, Golden Spire, Gascoigne's Scarlet Seedling, Emperor, Lord

of Cox's Orange Pippin Apple, and huge fruits of Warner's King. 3rd, Messrs. LAXTON BROS., Bedford, who had fruits of high quality but small; the arrangement was remarkably attractive, sprays of Berberis Thunbergii forming a border. Notable dishes in this group were Allington Pippin, Gascoigne's Scarlet Seedling, Sandringham, Lord Derby, Wealthy, Bismarck, and Dartmouth Crab. 4th, Messrs. S. SPOONER & SONS, Hounslow.

Collection on a space of 12 feet by 6 feet.—For a display of hardy fruits, measuring 12 feet by 6 feet, there were six exhibitors, the 1st prize being awarded to remarkably highly coloured specimens shown by Mr. W. TAYLOR, Hampton. Apples Chas. Ross, Emperor Alexander, Lady Sudeley, Barnack Beauty, Gascoigne's Scarlet Seedling, Edward VII., Allington Pippin, Annie Elizabeth, Bismarck, Newton Wonder, Cox's Orange Pippin, Blenheim Pippin, Mere de Menage, Allington Pippin, King of the Pippins, and others were splendid samples. There were also good Pears and some Quinces. This exhibit was a most notable one, the fruits equalling any in the show for size and good quality. 2nd, the BARNHAM NURSERIES, LTD., Barnham, Sussex. They had very fine samples of such varieties of Apples

Conference, Beurré Bosc, Durondeau, Beurré Diel, Uvedale St. Germain, and Duchesse d'Angoulême Cherry: Guigne de Winkler; and Plum; President. The gathered fruits included:—*Apples*: The Queen, Chas. Ross, Cox's Pomona, Peasgood's Nonesuch, and Duchesse's Favourite. *Plums* were represented by Grand Duke, Late Orange, Coe's Golden Drop, President, Late Transparent, and others. *Pears*: Doyenné Boussoch, Marguerite Marillat, and Beurré Hardy.

Messrs. BUNYARD had fine trees of Gascoigne's Scarlet Seedling and Farmer's Seedling Apples; Pears Marie Benoist and Beurré Alex. Lucas; and a choice tree of Golden Eagle Peach. The gathered fruits were splendid, and embraced such fine Apples as King of Tompkin's County, Gascoigne's Scarlet Seedling, Ribston Pippin, Golden Noble, Chas. Ross, and Byford Wonder; and Pitmaston Duchess and Belle du Bois Pears.

DIVISION III.

(OPEN TO MARKET GROWERS ONLY.)

In the class for a display of hardy fruits occupying a table space of 18 feet run by 6 feet, the 1st prize included a Silver-gilt Medal, offered by the Fruiterers' Company. Mr. A. POUPART, Marsh Farm, Twickenham, was placed 1st for a collection of Apples and Pears, which, as a whole, was above the average quality and free from all blemishes. Of Apples, extra-fine specimens were observed of Stone, Peasgood's Nonesuch, Norfolk Beauty, Lane's Prince Albert, Bismarck, Warner's King, Twenty Ounce, Allington Pippin, Sandringham, Chas. Ross, Bramley's Seedling, Gascoigne's Scarlet Seedling, Chelmsford Wonder, Coronation, Barnack Beauty, Mabbott's Pearmain, The Queen, Striped Beefing, The Houblon (a handsome reddish Russet of the middle size), Egremont Russet, and Rosemary Russet. These formed a collection of the best modern varieties, not excelled by any others for size, or shape, or general excellence. Of Pears, we may mention Calebasse, Beurré Baltet, Conference, Beurré superfin, Durondeau, Beurré Hardy, Beurré d'Arenberg, Beurré Bachelier, Louise Bonne of Jersey, Fondante d'Automne, Pitmaston Duchess, and Emile d'Heyst, all good varieties for the market, large in size and of good appearance, just the fruits to suit the fancy of the ordinary purchaser. The 2nd prize was awarded to the KENTISH FRUIT GROWERS' UNION, 6 and 7, Market Buildings, Maidstone (manager, Mr. T. W. Startup). In a few instances the fruits had been closely sorted, and evidently the cultivators had employed fungicides in order to prevent skin blemishes.

The next class was for an exhibit arranged on a table space of 12 feet by 6 feet, the highest award for which was a Silver Medal presented by the Fruiterers' Company. The 1st prize was won by Mr. G. H. DEAN, Sittingbourne, with a representative collection of fine fruits, Mr. H. T. MASON, Hampton Hill, being placed 2nd. This exhibitor arranged his group in a novel but attractive manner, and quite simply. The fruits were piled up in round and oblong market baskets, some of the baskets being elevated in the centre to form a star, and from this radiated rows of baby baskets, the whole being brightened with autumn-tinted leaves. The Council affixed on the exhibitor's card an appreciation of his method of staging.

In this Market Grower's Division there was a class for 12 dishes of Apples, distinct, six culinary and six dessert, exhibitors in the two previous classes not being admissible. The 1st prize was taken by Mr. R. A. WHITING, Dargate, Faversham, with fine, well-selected fruits, of which we noted the Pippins, Allington, Cox's Orange, Ribston, and King; also Chas. Ross and Rival as dessert varieties, the culinary kinds being Peasgood's Nonesuch, Lord Derby, Emperor Alexander, Cox's Pomona, Warner's King, and Loddington. The fruits were large and clear in the skin. 2nd, Mr. A. E. MASON, Hampton Hill, with capital fruits of Ribston Pippin, Cox's Orange Pippin, and King of the Pippins, Jefferson, and Worcester Pearmain. The exhibitor's fine culinary varieties were Prince Albert, Peasgood's Nonesuch, The Queen, Allington Pippin, and Bismarck. Equal 3rd prizes were awarded to Miss K. M. COURTLAND, Knight's Farm, Colne Engrove, Essex, and Mr. A. J. CARTER, Billingshurst.



R.H.S. FRUIT SHOW.

[Phot graph by W. J. Vasey.]

FIG. 126.—COLLECTIONS OF HARDY FRUITS IN THE NURSERYMEN'S CLASSES.

Derby, Peasgood's Nonesuch, Lady Henniker, Queen Caroline, Bramley's Seedling, Yorkshire Beauty, and Cellini Pippin. Pears were represented by good fruits of Pitmaston Duchess, Winter Windsor, Conference, Emile d'Heyst, and Souvenir de Congres. (Silver-gilt Knightian Medal.)

Messrs. J. CHEAL & SONS, Crawley, also showed well in this class, having good fruits of well-known varieties of Apples and Pears, such as have been already enumerated. (Silver-gilt Knightian Medal.)

Collection of hardy fruit on a space of 20 feet by 6 feet.—There were four exhibits in this class, the 1st prize being given to Messrs. W. SEABROOK & SONS, Chelmsford, who showed large, clean fruits of the best culinary and dessert Apples, with a few Pears. Especially good were Apples Royal Jubilee, Newton Wonder, Emperor Alexander, Cox's Orange Pippin, Mother, Lane's Prince Albert, Peasgood's Nonesuch, The Queen, and Stirling Castle. Pear Marie Louise d'Uccle was excellent. The staging was decorated with fruiting sprays of Medlar. 2nd, Mr. R. C. NORCUTT, The Nursery, Woodbridge, Suffolk. This exhibitor had a splendid basket

as Gascoigne's Seedling, Bismarck, Coronation (a dessert Apple of fine appearance), Lord Derby, Worcester Pearmain, Chas. Ross, Warner's King, King's Acre Pippin, Lord Hindlip, Egremont Russet, and Invincible. 3rd, Messrs. JOHN PEED & SON, West Norwood.

ORCHARD HOUSE FRUIT AND TREES.

There were two exhibits in the class for a display of Orchard house fruit trees and fruits, the competitors being Messrs. T. RIVERS & SON, Sawbridgeworth, and Messrs. GEO. BUNYARD, LTD., Maidstone. Much the better trees were shown by Messrs. RIVERS, who were awarded the 1st prize. Besides the trees, each exhibitor arranged baskets of orchard-house fruits along the front, and these were in both cases very choice.

Of fruit trees in the premier display, notable examples were:—*Apples*: Belle de Pontoise, Cox's Pomona, Gascoigne's Scarlet Seedling, Buckingham (a very free cropper), King of Tompkins County (a magnificent tree that occupied the centre of the exhibit), and St. Martin's. *Pears*: Doyenné du Comice, Winkler, Beurré Bachelier,

DIVISION IV.

FRUITS GROWN ENTIRELY IN THE OPEN AIR.

(OPEN TO GARDENERS AND AMATEURS ONLY.)

Twenty-four dishes of Apples, distinct, sixteen cooking and eight dessert.—1st, Lieut.-Col. A. C. BORTON, Cheveney, Hunton, Kent (gr. Mr. J. Whittle), for very superior culinary fruits, large, clear, and well-chosen, of Emperor Alexander, The Queen, Lord Derby, Mère de Ménage, Belle Dubois, Peasgood's Nonesuch, Bramley's Seedling, Newton Wonder, Warner's King, Lane's Prince Albert, Houblon's Seedling, Belle Pontoise, Annie Elizabeth, and Stone's Seedling. The finer dessert varieties were Melon, Ribston Pippin, Cox's Orange Pippin, King of the Pippins, The Rival, Chas. Ross, Wealthy, and Allington Pippin. 2nd, C. GURNEY, Esq., Biggleswade (gr. Mr. A. Carlisle). The culinary varieties in this display were splendid, being of large size and clear in the skin; the finer were Bramley's Seedling, Blenheim Pippin, Newton Wonder, and Emperor Alexander. Dessert varieties of special merit were Chas. Ross, Cox's Orange Pippin, James Grieve, and Allington Pippin. 3rd, Sir EDMUND LODER, Leonardslee, Horsham (gr. Mr. W. A. Cook), with fruits of culinary kinds of rather small size. The best were Peasgood's Nonesuch, Loddington, Lane's Prince Albert, Gascoigne's Scarlet Seedling, and The Queen. His finer dessert Apples were St. Edmund's Russet, Blenheim Pippin, Adams's Pearmain, and Calville Rouge Precocé.

Eighteen dishes of Apples, distinct, twelve culinary, six dessert.—The 1st prize was won by J. G. WILLIAMS, Esq., Pendley Manor, Tring (gr. Mr. F. G. Gerrish), with excellent fruits of both kinds: the finer of the cookers were Warner's King, Harvey's Wiltshire Defiance, Lane's Prince Albert, Hambling's Seedling, Lord Derby, Peasgood's Nonesuch, Bramley's Seedling, and Withington Filbasket. The finer specimens of dessert varieties were Ribston Pippin, Red Blenheim Pippin, Chas. Ross, Crimson Quoining, and Rival. 2nd, Sir MARCUS SAMUEL, Bart., Mote Park, Maidstone (gr. Mr. G. H. Bacon). Well developed fruits were Bismarck, Peasgood's Nonesuch, Lord Derby, Lane's Prince Albert, The Queen, Harvey's Wiltshire Defiance, and Stirling Castle. The best varieties of dessert Apples were Cox's Orange Pippin, St. Edmund's Pippin, Wealthy, Chas. Ross, and Allington Pippin. 3rd, Major POWELL-COTTON, Quex Park, Birchington (gr. Mr. F. Cornford), who showed fine fruits of Mère de Ménage, Withington Filbasket, Alfriston, Peasgood's Nonesuch, Tyler's Kernel, Cox's Orange Pippin, and American Mother.

Twelve dishes of Apples, distinct, eight culinary and four dessert.—Mr. A. BASILE, Woburn Park, Weybridge, was awarded the 1st prize for extra fine fruits of Peasgood's Nonesuch, Lord Derby, Warner's King, Emperor Alexander, Gloria Mundi, Cox's Orange and Ribston Pippins, Rival, and Cornish Aromatic. 2nd, J. A. NIX, Esq., Tilgate, Crawley (gr. Mr. E. Neal), who showed choice fruits of Royal Jubilee, Lord Derby, and Lane's Prince Albert, and, dessert fruits, James Grieve, Scarlet Nonpareil, and Ribston Pippin.

Six culinary Apples of distinct varieties.—1st, Lieut.-Col. BORTON, with large fruits of Peasgood's Nonesuch, Warner's King, Mère de Ménage, Bismarck, and others. 2nd, C. GURNEY, Esq., with extra-large fruits of Peasgood's Nonesuch, Gascoigne's Scarlet, and Emperor Alexander.

Six dishes, distinct, of dessert Apples.—Lieut.-Col. BORTON was placed 1st for King of the Pippins, Wealthy, Allington Pippin, Christmas Pearmain, Cox's Orange Pippin, and Calville Rouge Precocé. 2nd, C. GURNEY, Esq. There were many competitors in this small class, and but little variation was seen in the exhibits.

Eighteen dishes of dessert Pears, distinct.—The 1st prize in this contest fell to Sir MARCUS SAMUEL, Maidstone, for astonishingly large fruits of Marguerite Marillat, Pitmaston Duchess, Beurré Baltét Père, Beurré Bosc, Beurré Hardy, Beurré Superfin, Beurré Fougeray, Doyenné du Comice, Marie Benoist, Durondeau, Triomphe de Vienne, Fondante Thiriot, Directeur Hardy, and Princess; 2nd, F. A. WHITE, Esq., East Grinstead (gr. Mr. W. T. Finch), with fine fruits,

among others of Nouveau Poiteau, Doyenné Boussoch, Beurré Bachelier, Magnate, Glou Morceau, very large Doyenné du Comice, and Jersey Gratioli; Lieut.-Col. BORTON was awarded the 3rd prize, showing immensely large fruits of Pitmaston Duchess, Marie Benoist, and Doyenné du Comice.

Twelve dishes of dessert Pears, distinct.—The 1st prize was won by Mr. A. BASILE, with Charles Ernest, Marie Benoist, Beurré Baltét Père, Triomphe de Vienne, Beurré Alexandre Lucas, and others; 2nd, Major POWELL-COTTON, with very fine examples of Marguerite Marillat, Chaumontelle, and Josephine de Malines.

Nine dishes of dessert Pears, distinct.—J. A. NIX, Esq., Tilgate, showed alone in this class. He staged clear-skinned fruits quite large enough for ordinary use. Very fine examples of Brockwell Park, Beurré Alexandre Lucas and Beurré d'Amanlis were noticed. The 1st prize was awarded.

Six dishes of dessert Pears, distinct.—The 1st prize was made in favour of JOHN BRENNAND, Esq., Baldersby Park, Thirsk (gr. Mr. J. E. Hathaway), who showed fruits of medium size of Louise Bonne of Jersey, Charles Ernest, Doyenné de Boussoch, and Beurré Bachelier; the 2nd prize was awarded to Mr. B. CRAYDON, 72a, East Street, Sittingbourne. The fruits of Pitmaston Duchess in this exhibit were amongst the largest shown on this occasion, and others of fine proportion were Princess, Marechal de la Cour, and Beurré Bachelier.

Three dishes of stewing Pears, distinct.—1st, Mr. B. CRAYDON, with Catillac, General Todleben, and Beurré Chassant; 2nd, Major POWELL-COTTON, with Uvedale's St. Germain, Gilgil, and Catillac.

Peaches.—There was a class for a dish of Peaches grown out of doors, the 1st prize being awarded to the Duke of Richmond for a splendid dish of Salvey, the fruits being large and of high colour; 2nd, Viscount ENFIELD, Wrotham Park, Barnet (gr. Mr. H. Markham), for the variety Princess of Wales, of large size.

Nectarines.—In a similar class for a dish of Nectarines, the 1st prize was awarded to the AMERICAN AMBASSADOR, Wrest Park, Ampthill (gr. Mr. G. Mackinley), for the variety Victoria, of medium size and pale in colour; 2nd, Major POWELL-COTTON.

Plums.—There were five classes for these fruits, one for three dishes, distinct, grown under glass, and another for the same number of varieties grown out of doors. Lord HOWARD DE WALDEN, Saffron Walden (gr. Mr. J. Vert), showed the finest fruits grown indoors, having Decaisne, Coe's Golden Drop, and Coe's Violet; 2nd, Mrs. BANKS, Kingston Lacy, Wimborne (gr. Mr. J. Hill), with President, Pond's Seedling and Grand Duke. C. H. BERNERS, Esq., Woolverstone Park, Ipswich (gr. Mr. W. Messenger), excelled in the other class, with Reine Claude de Bavay, President, and Coe's Golden Drop; 2nd, Lord HOWARD DE WALDEN, with the same varieties. C. H. BERNERS, Esq., had the best dish of Coe's Golden Drop; 2nd, Lord HOWARD DE WALDEN. The Marquis of NORTHAMPTON, Castle Ashby (gr. Mr. A. R. Searle), won the 1st prize in the class for one dish of any other dessert variety of Plum with Transparent Gage, whilst C. H. BERNERS, Esq., showed the best dish of a culinary Plum, having late Transparent Gage.

AFFILIATED SOCIETIES CLASS.

There was a class for societies in affiliation with the R.H.S., the schedule requiring six dishes of culinary, the same number of dessert Apples, and six dessert Pears. There were only four entries, the EAST ANGLIAN HORTICULTURAL SOCIETY winning the 1st prize, which included a Silver Challenge Cup and the Society's Silver Gilt Knightian Medal, with a magnificent collection, that included splendid fruits of (culinary Apples) Mère de Ménage, Bramley's Seedling, and Lane's Prince Albert; (dessert Apples) Allington Pippin, Ribston Pippin, Worcester Pearmain, Tyler's Kernel; (Pears) Conference, Pitmaston Duchess, Durondeau and Doyenné du Comice; 2nd, COLCHESTER GARDENERS' ASSOCIATION (Silver Gilt Banksian Medal). The other societies that exhibited were the Croydon and Addlestone Associations.

DIVISION V.

SPECIAL COUNTY CLASSES.

Classes to the number of 11 were provided for groups of counties or areas having similar climatic conditions, and including one each for Scotland, Ireland and the Channel Islands. In each case there was a section for six dishes of culinary and two dishes of dessert Apples, and another for six dishes of dessert Pears.

KENT.—*Apples:* This important fruit-growing centre was the first on the schedule, constituting a class in itself. There were three exhibits of Apples, all of superior quality, but much the finest was displayed by W. E. S. ERLE DRAX, Esq., Wye (gr. Mr. J. Bond). His fruits of Chas. Ross were magnificent; there was also a good sample of James Grieve, whilst fine culinary Apples were observed in Warner's King, Hambling's Seedling, Peasgood's Nonesuch (very large), and Lord Derby. 2nd, Rev. H. A. BULL, Westgate (gr. Mr. F. King), with choice Cox's Orange Pippin, Lady Sudeley, Striped Beefing, Gascoigne's Scarlet Seedling and Warner's King.

—*Pears.*—The same number of exhibitors contested in the class for Pears, and again Mr. DRAX excelled with a meritorious collection, and was easily 1st. He showed Beurré Superfin (extra choice), Beurré Bachelier, Beurré Diel, Beurré Alexandre Lucas, Pitmaston Duchess, and Doyenné du Comice. 2nd, Lord HILLINGDON, Sevenoaks (gr. Mr. J. Shelton), with large but green fruits, Beurré Superfin excepted. Those of Pitmaston Duchess and Doyenné du Comice were very big.

SURREY, SUSSEX, HAMPSHIRE, DORSET, SOMERSET, DEVON AND CORNWALL.—*Apples:* The competitors numbered only four, a poor response for such fine Apple-growing counties as Hampshire, Somerset and Devon. The 1st prize collection was a grand one, the exhibitor being the Duke of RICHMOND, Goodwood (gr. Mr. F. Breck). Both the dessert sorts, Rival and Cox's Orange Pippin, were remarkably good; the culinary sorts were Lord Derby, Lane's Prince Albert (a fine sample), Peasgood's Nonesuch (large, well-matched, and finely coloured fruits), and Warner's King. 2nd, F. J. B. WINGFIELD DIGBY, Esq., Sherborne Castle (gr. Mr. T. Turton), whose best dish was Warner's King. We also noticed the fine Apple Hollandbury, of conical shape, ribbed and with fine red colouring. The fruits of Cox's Orange Pippin were rather small and deficient in colour.

—*Pears.*—Mr. DIGBY showed finely in the Pear section, and received the 1st prize, the only fault being a lack of colour. There were extra large fruits of Beurré Baltét Père, Durondeau, Doyenné du Comice, Marie Benoist, St. Luke, and Beurré Bachelier. 2nd, C. H. COMBE, Esq., Cobham Park, Surrey (gr. Mr. A. Tidy). This collection included an excellent dish of Louise Bonne de Jersey; the others were very green.

WILTS, GLOUCESTER, OXFORD, BUCKS, BERKS, BEDS, HERTS AND MIDDLESEX.—*Apples:* There were only four exhibits from these eight counties. Lord HILLINGDON (gr. Mr. A. R. Allan) had very fine fruits and won handsomely. He showed splendid samples of Cox's Orange Pippin, Ribston Pippin, Emperor Alexander (very good), Warner's King, Lord Derby, and Peasgood's Nonesuch. 2nd, J. B. FORTESCUE, Esq., Dropmore (gr. Mr. C. Page), whose finest specimens were Chas. Ross, Cox's Orange Pippin, Tyler's Kernel, and Loddington.

—*Pears.*—Lord HILLINGDON was also 1st for Pears, Durondeau was his best dish. Thompson's were rather small, but of excellent quality; there was also a good dish of Marie Louise; Triomphe de Vienne, and big Pitmaston Duchess completed the varieties. 2nd, Viscount ENFIELD, Wrotham Park (gr. Mr. H. Markham), with fruits showing fine finish all round, highly coloured, not over large, but most suitable for the dessert table. The best dish was of Marie Louise (with mellow skins), Durondeau, Beurré Bosc, and Beurré Superfin were also good; Pitmaston Duchess was a little rougher on the skin.

ESSEX, SUFFOLK, NORFOLK, CAMBRIDGE, HUNTS AND RUTLAND.—*Apples:* The better of two exhibits was put up by Col. PETRE, Westwick, Norwich (gr. Mr. G. D. Davison). The fruits exhibited remarkably high colouring, especially Mère de Ménage, Ribston Pippin, and Gascoigne's Scarlet Seedling. There was a nice

plate of Cox's Orange Pippin and extra big fruits of Bramley's Seedling. The remaining variety was Stone's Apple. 2nd, W. A. Voss, Esq., Eastwood Road, Rayleigh. In this collection was seen delicate-looking fruits of The Queen. The old Scarlet Pearmain formed one of the dessert kinds, the other being Duke of Devonshire, like a green Cox's Orange Pippin.

—*Pears*.—Col. PETRE had the best of three collections, the fruits being of large size, Triomphe de Vienne was of fine size and good finish, Marie Louise, Doyenné du Comice (extra big), Durondeau (with deep red flush on the skin), and Pitmaston Duchess. They were a choice lot, and probably the best yet noticed in the county classes. 2nd, C. H. BERNERS, Esq., Woolverstone, Ipswich (gr. Mr. W. Messenger). The fruits of Durondeau were ripe and good,

Orange Pippin, and Ribston Pippin. They were a good even lot, but the skins were green. 2nd, Mr. JOHN LEE, Higher Behington, Cheshire, with large Warner's King, Hawthornden (small but finely coloured), Cox's Orange Pippin, and a showy dish of Chas. Ross.

—*Pears*.—1st, Duke of PORTLAND, Welbeck (gr. Mr. J. Gibson), with extra fine fruits of Chas. Ernest (splendid), Emile d'Heyst, Beurré Diel, Pitmaston Duchess, Marie Benoist, and big specimens of Doyenné du Comice, not red anywhere, but a delicate greenish yellow. The 2nd prize was awarded to a good exhibit shown by F. BIBBY, Esq., Hardwick Grange, Shrewsbury (gr. J. Taylor).

WORCESTER, HEREFORD, MONMOUTH, GLAMORGAN, CARMARTHEN AND PEMBROKE.—*Apples*:

hibits, and neither very good. P. YORKE, Esq., Erddy Park, Wrexham (gr. Mr. G. Aitkens), was awarded the 1st prize. Fruits of the variety Golden Noble, in the 2nd prize group, were not bigger than Cox's Orange Pippin, and quite green instead of golden. Peasgood's Nonesuch was not much larger.

—*Pears*.—Mr. YORKE was again placed 1st. He showed small but rather good fruits of Marie Louise, Louise Bonne de Jersey, Beurré Hardy, and Beurré Sterckmans. 2nd, Col. CORNWALLIS WEST, Ruthin Castle (gr. Mr. H. Forder).

THE SIX NORTHERN COUNTIES OF ENGLAND AND THE ISLE OF MAN.—*Apples*: JOHN BREN, Esq., Baldersby Park, Thirsk (gr. Mr. J. E. Hathaway), showed the better of two exhibitors. The influence of a northern climate was noticeable in the specimens which included Rival, Lord Derby, Royal Jubilee (a good dish), Worcester Pearmain (highly coloured) and Bismarck. 2nd, W. E. HYDE, Esq., Northwood Hall, Sheffield. The dessert kinds were fair samples of Cox's Orange Pippin and Allington Pippin, but the culinary sorts were under size for the varieties.

—*Pears*.—Mr. BRENNAND again won with fruits of average quality; 2nd, W. E. HYDE, Esq., with green fruits below average exhibition size.

SCOTTISH COUNTIES. There was only one exhibit of Apples and none of Pears from the whole of Scotland. The small exhibit of Col Gordon, however, was a fine one. The fruits showed excellent finish and high colour, but were not of extra large size. They embraced King of the Pippins, Worcester Pearmain, Gascoigne's Scarlet Seedling (very highly coloured), The Queen, Hawthornden, and Peasgood's Nonesuch.

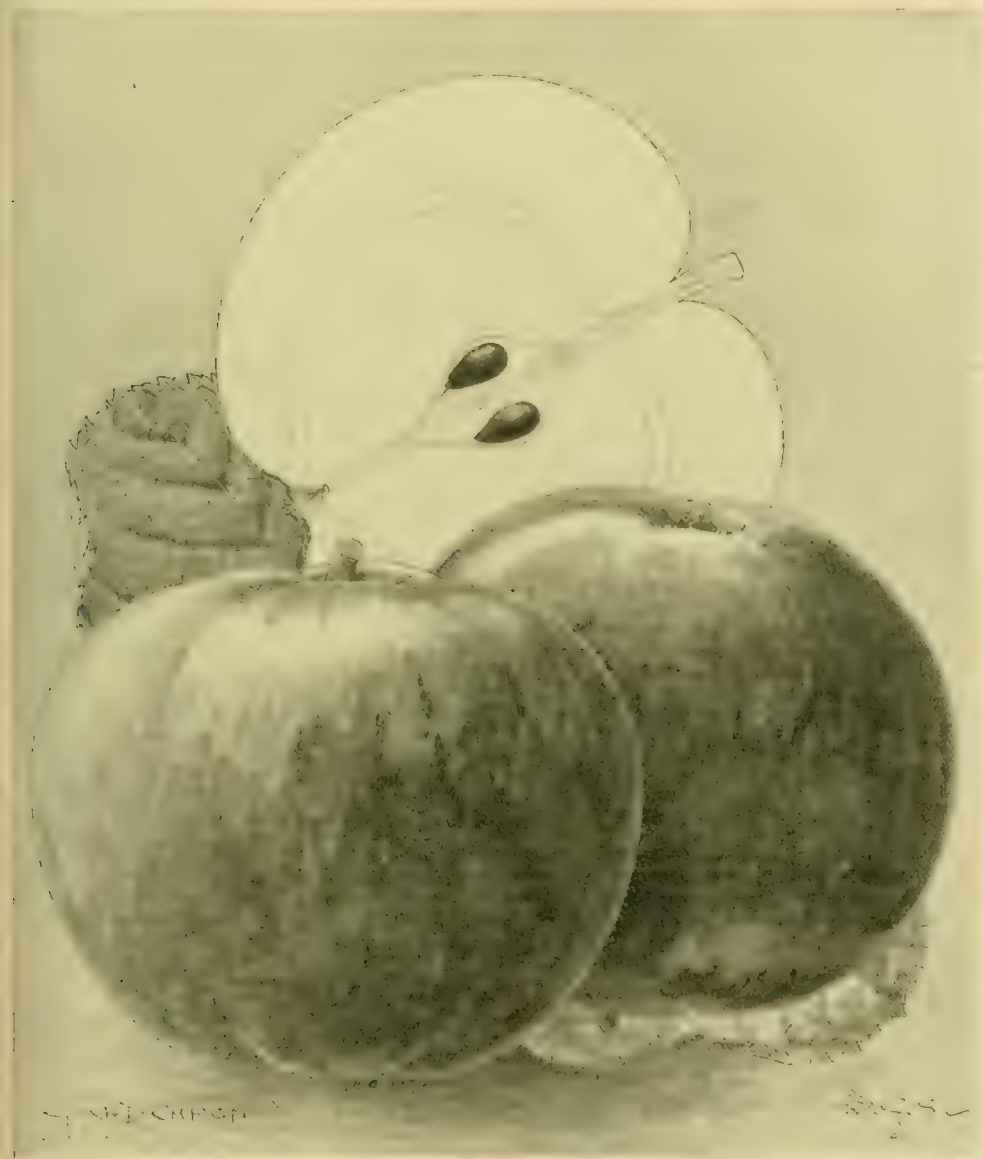
IRISH COUNTIES.—The Earl of Bessborough, C.B., Piltown, Kilkenny (gr. Mr. T. E. Tomalin), showed that Ireland can grow fine Apples, equal to some of the best from English gardens. Fruits of Cox's Orange Pippin were small but finely coloured. King of the Pippins (good), Warner's King (splendid), Hamblings Seedling, Peasgood's Nonesuch and Loddington were also fine examples. 2nd, Mr. C. B. BROW, Ashern Conna, Co. Cork. Chas. Ross was shown well in this exhibit, also Allington Pippin and Emperor Alexander.

DIVISION VI.

SINGLE DISH CLASSES.

DESSERT APPLES.

Twenty eight classes were provided for varieties of dessert Apples, 26 being for specified varieties. Several kinds were poorly represented, these being such as find little favour with growers, and some in the list may be regarded as worthless. *Adams's Pearmain*. This fine old variety was represented by six dishes. Lord HILLINGDON, Uxbridge (gr. Mr. A. R. Allan), showed the finest sample, and Mr. W. STARTUB, West Farleigh, was 2nd. The fruits generally were of moderate quality only.—*Allington Pippin*: This is evidently a popular variety, as there were 14 dishes, some of the fruits being too large for dessert purposes. E. MOCATTA, Esq. (gr. Mr. T. Stevenson), was placed 1st, the Duke of RICHMOND, Goodwood (gr. Mr. F. Brock), taking 2nd place with rather brighter-coloured fruits.—*American Mother*: There were 16 dishes of this variety, the fruits generally showing bright colour. Lord HILLINGDON was a good 1st, having handsome fruits. C. A. MORRIS FIELD, Esq., Sevenoaks (gr. Mr. R. Edwards), was placed 2nd.—*Ballinora Pippin*: An Irish Apple, of which only one dish was staged. The exhibitor was Lord HILLINGDON, Sevenoaks (gr. Mr. J. S. Shelton).—*Belle de Boskoop*: Four dishes of this Dutch Apple were exhibited, the various fruits exhibiting remarkable differences in appearance. J. WALTER, Esq., Bearwood, Berks (gr. Mr. W. Barnes), had the best sample; 2nd, Mr. W. STARTUB.—*Christmas Pearmain*: A small but pretty Apple, shown by four exhibitors, the best dish being staged by the Duke of RICHMOND; 2nd, W. E. S. ERLE DRAX, Esq. (gr. Mr. J. Bond).—*Ben's Red*: This variety was represented by three dishes only, all the fruits being



R.H.S. FRUIT SHOW.

FIG. 127.—APPLE "HOUNSLOW WONDER": RECEIVED R.H.S. AWARD OF MERIT ON OCTOBER 13.

Directeur Hardy showed high red colour, Pitmaston Duchess with mellow yellow skin, Durondeau also finely coloured, and Doyenné du Comice small, but good. Col. Hon. C. HARBORD (gr. Mr. W. Allan) showed a fruit of Pitmaston Duchess weighing in this class 2 lb. 1 oz.

LINCOLN, NORTHAMPTON, WARWICK, LEICESTER, NOTTS, DERBY, STAFFS., SHROPSHIRE AND CHESHIRE.—*Apples*: Two exhibits only were forthcoming from these counties, the Duke of RUTLAND, Belvoir Castle, Grantham (gr. Mr. W. H. Divers), being placed 1st with Peasgood's Nonesuch, Belle de Pontoise, The Queen, Gascoigne's Scarlet Seedling (extra good), Cox's

There were two exhibits from these western counties. W. DENNIS BEST, Esq., Worcester, won the 1st prize with Lord Derby (extra big and good), Lane's Prince Albert (splendid), Stirling Castle, a nice dish of Cox's Orange Pippin, and big and highly-coloured fruits of Worcester Pearmain. 2nd, G. H. HADFIELD, Esq., Moraston House, Ross (gr. Mr. J. Dick), Bramley's Seedling being his best dish.

—*Pears*.—This was a poor class, the only exhibitor being Mr. HADFIELD, who had fruits of good average quality.

OTHER COUNTIES OF WALES.—*Apples*: This also provided a poor class, there being two ex-

rather small. Mr. J. BOND won the 1st prize, the Rev. H. A. BULL, Westgate-on-Sea (gr. Mr. F. King), coming 2nd.—*Blenheim Pippin*: This famous variety was only represented by 10 dishes, which is sufficient to show that the trees have fruited but poorly this year. Here, too the variations in the fruits were remarkable. The Rev. H. A. BULL was 1st with pretty, well-coloured samples. 2nd, H. ST. MAUR, Esq., Newton Abbot (gr. Mr. E. Richardson).—*Charles Ross*: A comparatively new variety. Some of the samples were rather too large, but all were of great beauty. Mr. G. CROYDEN, Sittingbourne, was placed 1st, and Mr. R. EDWARDS 2nd amongst eight exhibitors.—*Claygate Pearmain*: The best of three exhibits was staged by Mr. R. EDWARDS, Mr. GARDENER, Ruxley Lodge, Esher, being 2nd.—*Coronation*: This Apple was seen in four dishes, Mr. BROCK having the best sample; the 2nd prize fell to an Irish grower, the exhibitor being Mr. C. B. BROAD, Co. Cork, for samples that were richly coloured.—*Cox's Orange Pippin*: As might be expected, this class brought a keen competition, there being 15 dishes, generally excellent samples, the best coming from Mr. DENIS BEST's garden at Worcester; 2nd, Mr. H. B. DAVIES, Ashford, Middlesex.—*Duke of Devonshire*: A variety not widely grown, the best of four dishes coming from Mr. W. A. VOSS, Rayleigh, Essex; 2nd, Col. PETRE, Norwich (gr. Mr. G. D. Davison).—*Egremont Russet*: Mr. J. BOND, Wye, showed beautifully golden fruits and won the 1st prize, J. SPEER, Esq., Swanley Junction, being placed 2nd. There were seven exhibits.—*Fearn's Pippin*: Although one of the oldest varieties of Apple, it was scarce on this occasion, there being only three dishes. Mr. W. BARNES won the 1st prize with brightly-coloured fruits; 2nd, Mr. H. G. KLEINWORT, Maidstone.—*The Houblon*: Only one dish of this new variety was staged, and it received the 1st prize. It was a very handsome sample, however, and was shown by Mr. RICHARDSON.—*James Grieve*: No fewer than nine dishes of this popular sort were presented. Lord HOWARD DE WALDEN, Saffron Walden (gr. Mr. J. Vert), was 1st with singularly beautiful fruits; 2nd, Mr. RICHARDSON.—*King of Tompkin's County*: This class brought three dishes only, Lord HOWARD DE WALDEN being again placed 1st; 2nd, Mr. A. SMITH, Roehampton Lane.—*Lord Hindlip* was poorly represented in a single dish, the fruits being very green and speckled, the 2nd prize only being awarded. The exhibitor was Mr. T. JACKSON, Thornton Heath.—*Margil*: Four dishes of this variety were presented, Lord HILLINGDON taking the 1st prize with fruits from his Seven-oaks garden, and the 2nd prize with others from his Middlesex garden.—*Ribston Pippin*: This well-known sort was seen in 13 dishes, forming a capital lot of fruits, much superior to some of the newer and much-boomed varieties. Lord HILLINGDON was easily 1st; 2nd, Lord HOWARD DE WALDEN.—*Rival*: This class brought six dishes, the best coming from the garden of the Duke of RICHMOND; 2nd, C. B. BROAD, Esq., Cork.—*Scarlet Pearmain*: Oddly enough, this old variety was seen in one dish only, and the exhibit only received 2nd prize. Shown by J. T. CHARLESWORTH, Esq., Nutfield (gr. Mr. F. W. Herbert).—*St. Edmund's Pippin*: Of the five dishes staged the best was shown by Mr. F. LANDSELL, Leicester; 2nd, J. B. FORTESCUE, Esq., Dropmore (gr. Mr. C. Page).—*Wealthy*: A superb sample, the best of eight dishes, was shown by Mr. C. O. WALTER, Wantage; 2nd, Sir CHARLES HAMILTON, Bart., Sandy, Beds. (gr. Mr. T. W. Birkinshaw). *Any other variety*: In the class for any other variety of Apple fit for present consumption, 15 dishes were presented. It was interesting to see the old variety King of the Pippins placed 1st. They were splendid fruits, the exhibitor being Lord HILLINGDON; 2nd, Worcester Pearmain, shown by a Worcester grower, Mr. BEST; 3rd, King of the Pippins, the exhibitor being W. W. MANNDY, Esq., Bexley; 4th, Jefferson, shown by Mr. A. SMITH.—In a corresponding class for any other variety ripening later, there were 10 dishes. The

old Cornish Gilliflower was placed 1st: the sample was by no means a pretty one. The exhibitor was Mr. W. BARNES; 2nd, McIndoe's Russet, a fine late Apple, shown by Lord HILLINGDON; 3rd, Scarlet Pearmain, shown by Mr. W. A. VOSS.

CULINARY APPLES.

In some of these classes the fruits were of extraordinary size; still, many showed the cold, uncongenial nature of the season.—*Annie Elizabeth*: This first-class late cooking Apple was seen in 11 dishes. A new competitor, B. HENDERSON, Esq., Berkhamsted (gr. Mr. H. Smith), was awarded the 1st prize for grand fruits; 2nd, Mr. DRAX.—*Beauty of Kent*: There were four dishes of this variety, the best coming from J. LUBBOCK, Esq., Byfleet, Surrey (gr. Mr. J. B. Lowe); 2nd, Hon. Col. HARBORD.—*Bismarck*: This class brought six dishes, all very good fruits, Mr. BEST taking the 1st place and Mr. G. RICHARDSON the 2nd.—*Bramley's Seedling*: There were 13 dishes of this grand variety, and all were of singularly good quality. Earl STANHOPE, Sevenoaks (gr. Mr. J. C. Sutton), was easily 1st, Mr. BEST being placed 2nd.—*Byford Wonder*: Of two dishes staged, Mr. R. EDWARDS had the better one, Mr. J. LEE BEVINGTON, Cheshire, being 2nd.—*Dumelow's Seedling* (syn. *Wellington*): This variety was shown by six competitors, the 1st prize being awarded to Mr. A. SMITH for fine fruits; 2nd, Mr. J. B. LOWE.—*Edward VII.*: This Apple was seen in one dish only; the fruits were very clean, but green, being evidently a late keeper. Shown by Mr. F. LANDSELL, Leicester.—*Emperor Alexander*: Only two dishes of this once-popular variety were seen, Mr. CHARLESWORTH and Mr. HENDERSON taking the 1st and 2nd prizes respectively.—*Encore*: This new variety was represented by one dish only, a fine sample, shown by Mr. R. M. WHITING, Hereford.—*Gascoigne's Scarlet Seedling*: The best fruits were shown by Mr. DRAX, Mr. E. MOCATTA taking the 2nd prize.—*Golden Noble*: The best of five dishes was shown by Mr. JACKSON, Thornton Heath; 2nd, T. J. B. WINGFIELD DIGBY, Esq., with fruits of smaller size, but richly coloured.—*Grenadier*: This variety was represented by five dishes, Mr. FORTESCUE winning the 1st prize with extra large fruits; 2nd, Mr. BROAD, with good samples from Ireland.—*Hambling's Seedling*: Mr. RICHARDSON had the finest of seven dishes, being followed closely by Mr. J. C. SUTTON.—*Lady Henniker*: Three rather indifferent samples were staged. 1st, Duke of RICHMOND; 2nd, Mr. FORTESCUE.—*Lane's Prince Albert*: This variety was seen in 12 dishes, the 1st prize fruits, shown by Mr. BEST, being unusually large and broad; 2nd, Mr. BROCK. All the dishes in this class contained fine samples.—*Lord Derby*: This class brought 12 dishes, Mr. BEST's 1st prize fruits being extraordinarily fine specimens.—*Mère de Ménage*: The best of five exhibits was shown by Mr. C. D. DAVISON.—*Newton Wonder*: There were 10 dishes, all fairly representative of this fine Apple. Mr. W. BARNES took the 1st prize with beautiful specimens; 2nd, Mr. LANDSELL.—*Norfolk Beauty*: The 1st prize dish contained superb fruits, being shown by Mr. W. ALLAN, Gunton Park; but Mr. BROAD, an Irish grower, followed closely.—*Peasgood's Nonesuch*: Mr. H. B. DAVIES had the best sample of this huge variety; 2nd, Mr. D. BEST.—*Potts's Seedling*: Only three dishes were represented, the fruits being of medium size. It is an Apple which has had its day. Mr. TURTON was placed 1st; Mr. F. W. PLATT, Highgate, being 2nd.—*Royal Jubilee*: This fine variety was seen in eight dishes. The Duke of RICHMOND showed the best specimens, the 2nd prize being awarded to Mr. JOHN LEE, Bebington.—*Stirling Castle*: It was surprising to find only four dishes representing this excellent Apple, Mr. BEST and Mr. FORTESCUE taking the prizes in this order.—*The Queen*: There were eight dishes, some of the fruits being well coloured. The best came from Mr. W. A. VOSS; 2nd, Mr. DRAX.—*Tower of Glamis*: This is still a good culinary Apple. Of seven dishes, the finest was shown by the Earl of BESSBOROUGH, Co. Kilkenny (gr. Mr. F. E. Tomalin); 2nd, Lord STANHOPE (gr. Mr. C. Smith).—*Warner's King*: This, one of the first market Apples of to-day, brought 13 dishes, including some wonderfully fine fruits. 1st, Mr. BEST; 2nd, Mr. MOCATTA.—The final class for cooking Apples was for any other variety than those enumerated. No fewer than 16 dishes were staged. Magnificent fruits of Tyler's Kernel,

shown by Mr. A. SMITH, Roehampton, were placed 1st; 2nd, Mrs. Barron, shown by Mr. BROCK; 3rd, Gloria Mundi; 4th, Withington Fillbasket.

PEARS.

There were 40 classes for these fruits in single dishes, not all of which were filled, and, in many cases, the entries were few. This served to show that, indifferent as the season has been for Apples, Pears have been affected far worse. *Beurré Alexandre Lucas*: There were but two dishes, Mr. DIGBY coming 1st and Mr. FORTESCUE 2nd.—*Beurré d'Amanlis*: The only exhibitors were the Rev. H. A. BULL and G. MILLER, Esq., Radlett, the prizes being awarded in this order.—*Beurré d'Anjou*: Again there were only two exhibits; 1st, Mr. TURTON, 2nd, Mr. FORTESCUE.—*Beurré Bosc*: Lord HOWARD DE WALDEN was placed 1st for this variety, and Mr. DIGBY 2nd.—*Beurré Dumont*: Mr. SKETTON and Lord HILLINGDON were the only exhibitors in this class, receiving the 1st and 2nd prizes respectively.—*Beurré Hardy*: Lord HILLINGDON had the best of three dishes, the Rev. H. A. BULL taking the 2nd prize.—*Beurré Superfin*: This Pear was seen in five dishes, of which the best came from C. H. BERNERS, Esq., Ipswich (gr. Mr. Messenger); 2nd, Mr. DIGBY.—*Blickling*: Only one dish of this variety was staged, and it was not surprising to find the exhibitor was Mr. W. ALLAN.—*Charles Ernest*: The Duke of PORTLAND, Welbeck Abbey (gr. Mr. J. Gibson), was placed 1st out of four exhibitors with superb fruits; 2nd, Mr. MESSENGER.—*Comte de Lamy*: Four dishes, all with small fruits, were shown, Mr. FORTESCUE and Mr. SKETTON taking the 1st and 2nd prizes respectively.—*Conference*: Col. PETRE showed best of seven exhibitors, having extra large fruits; 2nd, R. F. BRISTOWE, Esq., Mildenhall (gr. Mr. J. Reynolds).—*Directeur Hardy*: This variety was represented by three dishes, Col. PETRE having the best exhibit in large fruits; 2nd, F. BIBBY, Esq., Shrewsbury (gr. Mr. J. Taylor).—*Doyenné du Comice*: Col. PETRE excelled with this choice variety, Mr. TURTON being 2nd.—*Durondeau*: Brightly-coloured fruits were seen in six dishes. Col. PETRE won with superb samples; 2nd, Mr. DIGBY.—*Emile d'Heyst*: Mr. W. ALLAN and Mr. J. REYNOLDS were the only exhibitors, and were awarded the prizes.—*Fondante d'Automne*: Mr. W. ALLAN showed the better of two exhibitors; 2nd, Mr. SKETTON.—*Fondante de Thriot*: Mr. MESSENGER had the best of four dishes; 2nd, Mr. BROCK.—*Glou Morceau*: Col. PETRE had much the better of the two dishes staged.—*Joséphine de Malines*: Mr. DIGBY's fruits were the finest of six exhibits; 2nd, DUKE OF PORTLAND.—*Le Lectier*: Lord HOWARD DE WALDEN (gr. Mr. J. Vert) was placed 1st, and Mrs. BANKES, Wimborne, 2nd.—*Louise Bonne of Jersey*: This class brought but three dishes of moderate excellence. Mr. TAYLOR, Shrewsbury, was awarded the 1st prize, and A. BENSON, Esq., Merstham, Surrey (gr. Mr. Cornish), the 2nd.—*Marquérîte Marillat*: Col. PETRE alone staged this variety, having splendid fruits, and Mr. DIGBY was the only exhibitor of *Marie Benoist*, which he showed in fine form.—*Marie Louise* brought but three dishes, but those from Col. PETRE and Mr. W. ALLAN were specially fine, and took the prizes in this order.—There were five dishes of *Nouvelle Fulvie*, Mrs. BANKES having the best fruits.—*Olivier de Serres*: Six dishes made but a poor show, the fruits being of indifferent appearance. Mr. DIGBY and Lord HILLINGDON were awarded the prizes.—*Pitmaston Duchess*: Nine dishes were staged, Mr. H. C. KLEINWORT, Maidstone, showing best, having fine fruits. 2nd, Lord HILLINGDON.—*President Barabe*: Only two dishes were staged, the 1st prize going to Mr. W. ALLAN, Gunton Park Gardens.—*Thompson*: This Pear does not attract attention by its beauty, although it is of good eating quality. There were four dishes, Mr. DIGBY being placed 1st, Lord HILLINGDON following closely.—*Triomphe de Vienne*: The soundest fruits were shown by Lord HILLINGDON.—*Winter Nelis*: This Pear was seen in six dishes, Mr. J. REYNOLDS having the best; 2nd, Mr. GARDENER, Ruxley Lodge. In the class for eight fruits of any other variety of early Pear only four dishes were staged, Mr. W. A. VOSS having the best in *Doyenné Boussoch* (see fig. 125), *Fondante de Cuerne* being 2nd. The class for any other variety of late Pear brought ten exhibits, Mr. DIGBY having the best in *Easter Beurré*; 2nd, *Beurré Diel*; 3rd, *Beurré Rance*.

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

OCTOBER 11.—*Present*: Mr. E. A. Bowles, M.A., F.L.S., F.E.S. (in the Chair); Dr. A. B. Rendle, F.R.S.; Messrs. R. H. Curtis, J. Fraser, W. E. Ledger, A. Worsley, J. W. Odell, W. Hales, R. H. Pearson, G. Gordon, J. Douglas, W. C. Worsdell, W. Fawcett, and F. J. Chittenden (hon. sec.).

Buds on leaves.—Mr. W. C. WORSDELL showed leaves of *Verbascum nigrum* affected by some disease, now under investigation, which causes the production of numerous adventitious buds around the margins of the leaves. Masses of small buds are also produced around the base of the stem.

Lycoris aurea, &c.—Mr. A. WORSLEY showed a flowering spike of the Chinese *Lycoris aurea*, which he found succeeded and flowered well when planted out in a house. He also showed flowers of the South African Composite, *Cryptostemma calendulaceum*, which is very sensitive to frost, but which ripens seed early, and so succeeds in maintaining itself.

Modified flowers of Erica cinerea.—Mr. BOWLES showed, on behalf of Mr. L. R. Russell, of Richmond, a form of *Erica cinerea* in which the flowers were replaced by deep red groups of closed, packed leaves arranged in fours, as in the flowers of normal plants, not in threes, as the foliage leaves are usually. The case was similar to that described and figured in the *Journal of Botany*, 1909, pp. 437-9, by Dr. Rendle, from wild plants collected near Axminster, except that in that instance ordinary flowers were also produced. Although no stamens were produced, carpels and apparently good ovules were borne in the centre of the groups of leaves.

Fasciation in Pyrethrum uliginosum.—Dr. D. H. SCOTT sent specimens of this plant with fasciated stems, in some cases separating before producing flower heads, and in others remaining fasciated until the flowering stage was reached, so that the head appeared as though two or three were joined.

Double-flowered Tropæolums.—Mr. J. L. ARKWRIGHT, of Lyonshall, Herefordshire, sent flowers of some double *Tropæolums* which he had raised. One or two of the plants were climbers, and there were among the plants more than a dozen distinct variations in colours. The flowers were regular and had no stamens or carpels.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

OCTOBER 6.—*Committee present*: Messrs. E. Ashworth, Arthur, Ashton, Chapman, Cowan, Crombleholme, Cypher, Holmes, Holden, Keeling, Parker, Shill, Thorp, Ward and P. Weathers.

There was a fairly good display of plants at this meeting.

Messrs. CYPHER & SONS, Cheltenham, were awarded a silver medal for an attractive display of well-grown plants, which included bright *Cattleya* and *Lælio-Cattleya* hybrids, some well-grown examples of *Dendrobium*, *Phalenopsis* v. *Schröderiana* and several good *Cypripediums*.

Mr. J. ROBSON, Altrincham, exhibited a small collection of *Cypripediums*.

THE LIVERPOOL ORCHID AND NURSERY CO., Gateacre, were awarded a silver medal for a group consisting of *Odontoglossums*, *Cattleyas*, &c.

CLIVE COOKSON, Esq., Wylam-on-Tyne (gr. Mr. Chapman), staged an interesting group, which included a few new plants, *Cypripedium Sibyl*, a hybrid between *C. Fairrieanum* × *C. Franciscæ* was shown in four distinct and named varieties, one of which *C. Sibyl* var. *punctatissimum* was voted a First-class Certificate. *C. Sibyl* var. *purpureum* received an Award of Merit. This latter distinction was also conferred on *Cattleya* × *Angela* (*C. intermedia* var. *nivalis* × *C. Schröderæ* (alba), a pretty and distinct albino; *Cattleya* × *Hardyano-Warneri*, the parents of which are indicated by the name. (Silver Medal.)

J. J. HOLDEN, Esq., Southport (gr. Mr. Johnson), exhibited a small group of good things, including *Cypripedium* × *Bleriot*, *C. × Dora Crawshay*, *Cattleya* × *Hera* var. *superba*, and *Cattleya* × *Iris* var. *illuminosa*, each of the plants named receiving an Award of Merit.

W. R. LEE, Esq., Heywood (gr. Mr. Woodhouse), usually displays at these meetings a contribution of choice plants. On this occasion he received First-class Certificates for *Odontoglossum crispum* var. "La Dame Charmante," a beautifully-formed flower of the white type, the lip being richly marked with deep red, and *Cattleya* × "Colleen Bawn," closely resembling the white forms of *C. × Hardyana* var. *alba*. Awards of Merit were voted to *Odontoglossum crispum xanthotes* var. *Snow Queen*, *Cattleya aurea* var. *Mercia*, and *Cypripedium* × *Antinous* Lees' var.

Col. J. RUTHERFORD, Blackburn (gr. Mr. Loft-house), was awarded points in the "R. Ashworth" competition for a nicely-arranged group of *Odontoglossums*, *Cattleyas*, and other popular Orchids.

F. A. HINDLY, Esq., Great Horton, Bradford, was awarded a Bronze Medal for a small display, consisting mainly of *Cypripediums*.

S. GRATRIX, Esq., Whalley Range, Manchester (gr. Mr. Shill), staged a group of choice *Cypripediums*, all notable for their fine forms. *C. × Ellis Markendale* is new, and was voted a First-class Certificate. *Brasso-Cattleya* × *Leemannæ* in the same group also received a First-class Certificate.

Mr. H. ARTHUR, Blackburn, received an Award of Merit for *Oncidium* × *Larkinianum*, a natural hybrid.

Messrs. STUART, LOW & Co., Bush Hill Park, Mr. W. SHACKLETON, Gt. Horton, Bradford, Mr.



FIG. 128.—A TURF CUTTING MACHINE.

J. BIRCHENALL, Alderley Edge, Mr. E. V. Low, Hayward's Heath, J. H. CRAVEN, Esq., Keighley, were exhibitors of small groups. P. W.

HORTICULTURAL CLUB.

IMPRESSIONS OF CARNAC (BRITTANY) AND ITS MENHIRS, &c.

OCTOBER 11.—On this date, at the Hotel Windsor, the Horticultural Club commenced its winter series of monthly dinners. The chair was occupied by Mr. Peter Veitch, of Exeter. In accordance with the long-established custom of the club, the dinner was followed by the reading of a paper for discussion, and on this occasion Mr. Geo. Bunyard, V.M.H., gave an account of his visit to Carnac, in Brittany, under the title of "Impressions of Carnac (Brittany) and its Menhirs, Dolmens and Alignments," illustrated by numerous lantern slides showing the remarkable number and arrangement of the large granite monoliths, for which Carnac is famous. In opening the subject, Mr. Bunyard, referring to the evolutionary side of human handiwork in the way of tools and architecture, of both of which Carnac has supplied much material for study, he referred to the investigations of his near neighbour in Kent, Mr. Benjamin Harrison, of Igham, who was the pioneer in establishing the existence of far more primitive and more ancient tools than the so-called Paleoliths which had been previously assumed to be the oldest of all. Of these older and ruder implements Mr. Bunyard exhibited several specimens, a careful examination of which showed indubitably that they had been artificially clipped into certain forms.

An interesting discussion followed the lecture, and a hearty vote of thanks was given in conclusion to Mr. Bunyard for his interesting address.

UNION OF HORTICULTURAL MUTUAL IMPROVEMENT SOCIETIES.

OCTOBER 14.—The annual conference of Affiliated Societies and Societies in Union with the Royal Horticultural Society, took place on this date, the second day of the fruit show, in the R.H.S. Hall, Westminster. Sir Albert Rolitt occupied the chair.

In opening the conference, the Chairman conveyed the assurances of the Council of the great interest it takes in the work of the debating societies and its readiness to do whatever lies in its power to promote the interests of all such societies. The Council has recently framed a certificate of "Recognition of Diligent Interests in Plants," to be awarded to children by Affiliated Societies in their juvenile show competitions. Sir Albert Rolitt said the advantages offered by the R.H.S. to the mutual societies are very great. The exhibitions, gardens, trials, experiments and publications of the parent society are of the utmost value in promoting the advance of horticulture, but in the localisation of effort the mutuals are of the greater value. The official list of lecturers compiled by the R.H.S. is specially drawn up for the use of the gardening societies, and prepared lectures, illustrated by lantern slides, may also be obtained.

The Journals of the R.H.S. are issued to the libraries of the mutuals for the benefit of the members, and medals and cards of commendation are also obtainable from headquarters.

The Chairman then spoke on the first subject on the agenda, viz., the international horticultural exhibition to be held in the grounds of Chelsea Hospital in 1912. It had been hoped that the exhibition secretary, Mr. Edward White, would be present to speak on this subject, but illness prevented his attendance.

It was proposed by Mr. Boshier, of Croydon, seconded by Mr. Basket, of Egham, and carried with enthusiasm by the meeting, that "this meeting heartily endorses the proposal to hold an international exhibition in 1912, and will do its utmost to give it publicity and support."

It was desired that the exhibition secretary should furnish the secretaries of the affiliated societies with a programme and full particulars of the exhibition as soon as possible.

A resolution was carried that "the meeting recommended to the Council of the Society the consideration of the following subject, introduced by the Croydon and District Horticultural Society:—

"Would the Council of the R.H.S. admit the sons of members of affiliated societies to vacancies occurring at Wisley for periods of two years at a premium less than that paid by ordinary students? Appointments to be according to merit shown by an entrance examination. A nominal wage to be given, and also a certificate of efficiency on the termination of service if the latter has been satisfactory. Three years apprenticeship in an approved garden to have been spent prior to admission."

The definition of an amateur gardener came under reconsideration. The R.H.S. rule was read, and the Rev. W. Wilks said this indicated the broad principle of differentiation between the amateur and professional gardener, but it is open to each society to further amplify the definitions in such a way as would satisfactorily meet any local difficulty or condition.

NEW INVENTION.

A TURF CUTTING PLOUGH.

Messrs. Boulton & Paul, Ltd., Norwich, have recently placed on the market a new machine (see fig. 128) for stripping the turves off grass land or lawns. The great advantage claimed by the makers for their machine over the old system of turf cutting is that a perfectly uniform thickness of the sod is assured, with the result that a considerable saving of labour is effected in relaying the turves. It is stated that with the aid of this plough an acre of turf may be stripped in the short space of two hours. Where turf laying forms an important item, this little implement, which is the invention of Mr. H. I. Muntz, of Hungerford, should prove of great service.

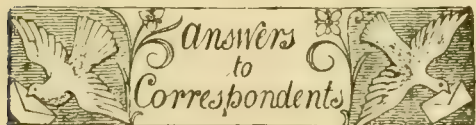
Obituary.

MR. P. HILL NORMAND.—We regret to record the death of Mr. Patrick Hill Normand, of Whitehall, Aberdour, Fifeshire, which took place at his residence on October 15. Mr. Normand was a keen lover of hardy herbaceous and Alpine flowers, and his garden at Whitehall contained an exceptional collection of choice plants. Several novelties were distributed from his gardens for the first time in Great Britain, including the two double-flowered *Helianthemums*, Jubilee and Old Gold, which sported from the crimson variety, Mrs. Earle. The deceased gentleman had not been in good health for some time past. The funeral took place at Dysart Cemetery on the 18th inst.

ENQUIRIES AND REPLIES.

TO DESTROY ANTS.—In answer to H. N. (see p. 271). I have found paraffin very suitable for destroying ants. The petroleum should be poured into their holes or haunts, from which they will very soon disappear, as those that are not killed by contact with the liquid will find their usual haunts untenable. I have entirely cleared my glass-houses of these pests by this method, after everything else had failed. W. C. C. Babington.

—One of your correspondents is asking for a cure for ants. I have tried several things, but the best is "Apterite," especially where it is possible to get at the ants. During the warmer weather, where I could find their runs (from one house to another) I gave them a good dusting with Apterite, and most of them were killed in a few minutes. Fred. Treseder.



••• The Editors will be glad to receive, for consideration, large photographs of horticultural subjects, suitable for reproduction as Supplementary Illustrations in this Journal.

CHRYSANTHEMUM RUST: *Beard.* To preserve the plants from attacks of this fungus, they should be sprayed at intervals, during the time they are making their growth, with a solution of potassium sulphide (liver of sulphur), 1 ounce in a quart of hot water, afterwards making this up, by adding clear water, to 2½ gallons. Pick off all leaves showing rust, and burn them. Good results may also be obtained from applications of water containing a little paraffin.

CUTTINGS OF ICELAND POPPY: *Cornflower.* Although a perennial, it is not usual to propagate this plant from cuttings. Save the seeds from the special plant you wish to grow, and endeavour to fix the variety by selection.

ELM ROOTS: *J. P.* After you have made the trench and destroyed the roots therein, make a thin wall of concrete, otherwise the roots will grow into the border again.

EMPLOYMENT AT KEW: *G. W. B.* If you write to the Director of the Royal Botanic Gardens, he will send you a memorandum of conditions of employment as gardener, together with a form of application. This must be returned to the Director, accompanied by a letter in the applicant's own handwriting, with testimonials in English from employers or head gardeners. Applicants must be unmarried, between 19 and 24 years of age, and must have been employed not less than four years in good gardens or nurseries. They must be healthy, free from physical defect, and not below average height. Gardeners whilst at Kew receive an allowance of 21s. per week to meet the cost of subsistence. Those who are selected to serve as sub-foreman receive 27s. per week. Extra allowances are granted for Sunday duty, a certain amount of which is compulsory.

HOME READING: *F. B., Surrey.* The book you refer to is entitled *The Faculty of Reading*, by George Redford, M.A. (Cambridge: University Press), price 1s.

LICENCE FOR GARDEN EMPLOYEES: *H. L.* If the person is employed as a garden labourer, no licence will be necessary. The courts have recently decided that, in the case of persons employed as professional gardeners, a licence is necessary.

MIGNONETTE DISEASED: *R. G. P.* The injury is caused by *Cercospora resedæ*, a fungus very prone to attack Mignonette. Spray the plants thoroughly, at intervals of four days, with a solution of liver of sulphur, one ounce to three gallons of water. Bordeaux mixture will also answer, but should be used at half the ordinary strength.

NAMES OF FRUITS: *C. W. T.* *Mère de Ménage.* —*E. Sanders.* 1, Ribston Pippin; 2, Lane's Prince Albert; 3, Welford Park Nonesuch; 4, not recognised.—*M. Sahl.* 1, The Queen; 2, Alfriston; 3, King of the Pippins; 4 and 5, Cox's Orange Pippin. The large Apple, Beauty of Kent. Pears: 2, Comte de Lamy; 3, Bishop's Thumb.—*James Willis.* 1, Peasgood's Nonesuch; 2, Belle du Bois.—*W. G. W.* 1, Newton Wonder; 2, Malster; 3, Melon Apple; 4, 5, 7, Beurré Diel; 6, Beurré Bosc; 8, Léon Leclerc de Laval.—*John Pugh.* 1, Beurré Capiaumont; 2, decayed; 3, Doyenné Boussoch; 4, Beurré d'Amanlis; 5, Beurré Hardy; 6, Doyenné du Comice.—*J. J.* 1, Beauty of Kent; 2, Cockle Pippin; 3, Small's Admirable; 4, Allington Pippin; 5, not recognised; 6, Egremont Russet.—*A. W. Gravenstein.*—*J. Halsey.* 1, Blenheim Pippin; 2, Fearn's Pippin.

NAMES OF PLANTS: *N. W. C.* 30, *Helenium autumnale*; 31, *H. a. striatum*; 32, *Rudbeckia maxima*; 33, *Echinacea purpurea*; 34, *Rudbeckia speciosa*; 35, *Helianthus rigidus*; 36, *Rudbeckia laciniata*.—*W. O. W.* 1, *Polygala myrtifolia grandiflora*; 2, *Gaultheria Shallon*; 3, *Aster Thomsonii*; 4, *A. Amellus*; 5, *Lysimachia clethroides*; 6, *Polygonum amplexicaule*.—*Cheriton.* *Alyssum maritimum*.—*Constant Reader.* 1, *Crepis rubra*; 2, *Poterium canadense*.—*R. P.* 1, *Tradescantia virginiana*; 2, *Vitis Cognata*; 3, *Polygonum polystachyum*; 4, *Selaginella Kraussiana*; 5, *Hibiscus* sp. send in flower; 6, *Vitis quinquefolia*.—*G. T.* 1, *Schinus Mollo*; 2, *Rhodotypos kerrioides*; 3, *Phillyrea media*; 4, *Pieris floribunda*; 5, *Osmanthus ilicifolius* var. *myrtifolius*.—*J. C. B.* *Hypericum patulum*, *Rubus phoenicolasius* and *Malva moschata*.—*A. B. C.* *Sempervivum ciliatum*. The *Lula* is attacked by what is known as Orchid disease or "spot." Cut off all the affected portions and burn them. —*C. C.* *Megaclinium falcatum*.—*R. A. A.* 1, *Oncidium oblongatum*; 2, *Stelis ophioglossoides*; 3, *Odontoglossum Lindleyanum*; 4, *Ada aurantiaca*.—*W. S.* 1, *Rhus Cotinus*; 2, *Leycesteria formosa*; 3, *Escallonia montevidensis*; 4, *Hibiscus syriacus* fl. pl.—*A. A., Oxted.* *Watsonia O'Brienii* of gardens. *Watsonia iridifolia* O'Brienii N. E. Brown illustrated in the *Gardeners' Chronicle*, March 5, 1892, fig. 43.—*H. H.* 1, *Pteris tremula*; 2, *Adiantum hispidulum*; 3, *Gleichenia dicarpa*; 4, *Lygodium scandens*; 5, *Blechnum orientale*; 6, *Lomaria gibba*.—*F. A. E.* 1, *Corydalis lutea*; 2, *Tropæolum canariensis*. Some mistake was evidently made in the naming of the plant before.—*J. W.* The specimen was too small for identification.

NERINE FOTHERGILLII: *Bulb.* The flowers are those of *Nerine Fothergillii*. With regard to the cultural requirements of the plants, the following particulars are given by Mr. Banks in the issue for November 17, 1906, p. 336. "Unlike a good many bulbous plants, they make their growth during the dark days of winter, and should therefore be afforded all the light possible at that time. After the flowering period, which is during September and October, the plants should be grown on shelves near the glass, in a cool, well-ventilated house, facing due south, having an atmospheric temperature at night of 45° to 50°. Watering should be judiciously done during the last two months of the year, one or two applications each week being quite sufficient for their requirements; but with the turn of the year and brighter days, they require looking over every other day. When they commence to show

signs of decay, water should be gradually withheld. While at rest, the plants should be cleared of all dead foliage, and placed in frames in the full sun, baking them all through the summer months, keeping them entirely without water until the flower scapes appear, which will be at about the middle of August. Any potting that is necessary should now be taken in hand, shaking the roots free from all the old soil and replacing it with good fibrous loam and sand. Use comparatively small pots, a pot-bound condition being favourable for the production of flowers. This operation provides an excellent opportunity to clear the bulbs of any pests that may infest them, mealy bug being the most troublesome. Stand the plants, whether repotted or not, in pans containing water, allowing them to become thoroughly soaked, afterwards placing them in the glass-house to flower."

PELARGONIUMS UNHEALTHY: *E. W. D.* No disease due to fungi is present, nor is the trouble caused by insects. The plants have received some wrong cultural treatment.

PLANTING A VINERY: *W. H. M.* Varieties of vines most suitable for your purpose are Black Hambro and Black Alicante. The former is a most reliable cropper, the bunches being very early in ripening. Black Alicante ripens much later, and the bunches will keep sound for several months when well finished. You need not plant any other sorts unless you need a white variety, in which case Foster's Seedling would succeed well with those mentioned; it ripens a week or so later than Black Hambro. Good planting canes would cost from 5s. to 7s. 6d. each. Fruiting canes from 10s. 6d. upwards. We do not advise the planting of Peach trees on the back wall of a vinery. The better plan is to purchase a few trees in pots. The prices of Peach trees in pots range from 5s. upwards, according to the size of the specimens. Hale's Early and Bellegarde are two suitable varieties for the purpose. Cardinal and Pine Apple Nectarines are excellent sorts of this fruit for pot culture.

PROPAGATING THE CHRYSANTHEMUM FROM STEM CUTTINGS: *F. D.* You would not be likely to be very successful in propagating Chrysanthemums from the hard stems. In the case of plants, after the flowers are cut, side shoots may develop from the stems, and these, taken off close to the main stem, will root under the ordinary treatment afforded to cuttings. In the case of some varieties, the stem cuttings do not prove satisfactory, and plants so raised are liable to vary in the colour of their flowers. If stems only are procurable, they may be cut into short lengths and a cut made below each joint. If these cut stems are covered partly with a sandy compost, they will start to grow from each node, and shoots thus formed may be taken off and treated as cuttings.

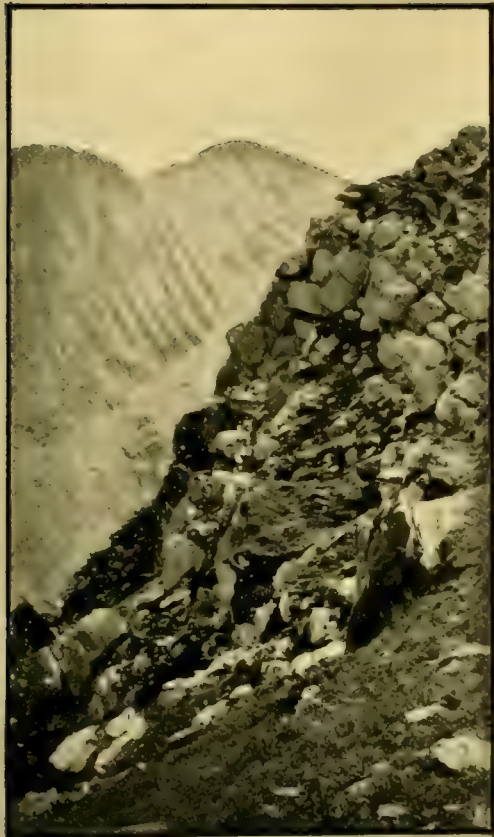
PUBLIC PARKS AND OPEN SPACES: *G. H. O.* The following works may be suitable for your purpose: *The Municipal Parks and Gardens of London*, by Lieut.-Col. J. J. Sexby, V.D. (London: Elliot Stock, Paternoster Row, E.C.); *The Royal Parks and Gardens of London*, by Nathan Cole (London: *Journal of Horticulture*, Fleet Street), price 2s. 6d.; *The Parks and Gardens of Paris*, by W. Robinson, F.L.S. (London: Macmillan & Co.)

SEEDLING VIOLA: *W. B.* The flower is of good form and fair substance, but, in our opinion, the colour being run in the centre spoils it. Had the centre been pure white, it would have been a most effective variety.

VAPORITE: *P. L.* Directions for employing this preparation for destroying ground insects are given by the makers with each package. Wireworm may be caught by placing traps of some vegetable, such as Potato or Turnip, on the borders.

Communications Received.—*E. H. Townsend* *E. Miles*—*W. J., Ltd.*—*W. W.*—*S. C.*—*L. J.*—*F. M.*—*F. D.*—*F. N.*—*Chloris*—*B. M.*—*H. O.*—*A. C.*—*L. L.*—*S. L.*—*B.*—*E. B.*—*W. P.*—*R. E. M.*—*Essex*—*W. E.*—*G. A.*—*F.*—*D. H. G.*—*W. M. C.*—*L. C.*—*J. L.*—*Shrewsbury*—*J. F. J.*—*Bromley*—*J. C.*—*Birchington*—*J. P.*—*Salisbury*—*H. B.*—*Blethley*—*J. H.*—*F. T.*—*Miss M. K.*—*C. W.*—*S. A.*—*A. O.*—*W. J. V.*—*W. G. S.*—*E. T.*—*N. G.*—*D. R.*—*B. L.*—*Aberdare*—*B. G.*—*W. H. D.*—*J. S. C.*—*Co.*—*C. T. D.*—*H. W.*—*G. L. J.*—*W. F. B.*—*D. N.*—*W. H.*—*N. W.*—*E. M.*—*R. P.*—*B. C.*—*E. F. W.*—*A. W. P.*—*B. D.*—*G. J. G.*—*T. S.*—*H. T.*—*S. L.*—*M. B.*—*Surrey Observer*—*R. W. T.*—*E. S.*—*Beckenham*—*Paper Mill.*

For Market Reports see page x.



GARDENERS'

W. J. NEILL

Photographs by H. Stuart Thompson

SCENES IN COUNTY KERRY.

THE THREE UPPER PICTURES ILLUSTRATE CARRANTUAL MOUNTAIN, THE HOME OF MANY RARE ALPINE PLANTS. THE BOTTOM ILLUSTRATION SHOWS THE WILD ARBUTUS UNEDO GROUPED AROUND THE LAKE OF KILLARNEY.

THE Gardeners' Chronicle

No. 1,244.—SATURDAY, October 29, 1910.

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EFFECTS OF POLLINATION ON ORCHID FLOWERS.

ALL who are interested in Orchids, either from a botanical or cultural point of view, are aware that the deposition of the pollen masses (pollinia) on the stigmatic surface of a tropical Orchid is often the signal for a striking sequence of events. The order of these events is as follows:—First the flower fades, though if the flower had not been pollinated it would have remained fresh for a considerable time, in some cases for days, in others for weeks, and in others again, such as *Phalenopsis violacea*, *P. amabilis* and *Rhynchostylis retusa* Bl., for a month or more. This premature withering, which resembles the natural withering, is ushered in by a closing movement of the perianth. Next, the gynostemium or column swells and the edges of the stigma may curve inward so as to enclose the swelling of the column are yet other changes. The ovary increases in size, its ovules, which curiously enough are not formed so long as the flower remains unpollinated, begin to develop and the perianth may become green and persist in this condition till the seeds are ripe. Needless to say, the full sequence of events is not exhibited by all tropical Orchids; nevertheless, it is fairly general. The occurrence of this remarkable series of post-floration changes, called forth by the deposition of the pollen-masses on the stigma of an Orchid flower, suggests a number of problems, the solution of which would prove certainly of great scientific interest and perhaps of some practical value. Chief among these problems is that which asks by what agency or agencies the pollinia produces their effects?

It might be supposed that the premature withering of the flower and the swelling of

the column are due to disturbances set up in the tissues of the column by the pollen tubes of the germinating pollen grains. The observations and experiments which have been made recently by Hans Fitting (*Zeitsch. F. Bot.* II, 1909) not only demonstrate that this is not the correct explanation, but throw an entirely new light on the origin of post-floration changes in Orchids.

Fitting's investigations, which were conducted in the laboratory and garden at Buitenzorg (Java) were made on many species of Orchids belonging to widely separated genera, and show that the changes which we have enumerated are not all due to the same cause. The rapidity of the premature withering of the flower induced by pollination would seem to preclude the explanation that it is an effect of the growth of the pollen tubes through the column. Moreover, this explanation is put out of court completely by the fact that grains of sand deposited on the stigma of *Rhynchostylis retusa* induce the same premature withering as that brought about by the pollen masses. This observation led Fitting to suspect that the withering is a consequence of mechanical injury of the stigmatic surface, a suspicion the truth of which he was able to verify by proving that scratching or scraping the stigmatic surface also produces the premature withering. To give rise to the result the damage need be but slight and must be local. Cutting through the column itself may be without effect, whereas a single scratch on the stigmatic surface of *Phalenopsis amabilis* suffices to induce withering of the flower in the course of a day or two, and this in the case of a flower which, if left intact, remains fresh for upwards of a month.

Further, it is only when certain parts of the stigma are touched and damaged slightly that the withering of the flower takes place, the susceptible parts being those neighbouring on the rostellum.

We are, therefore, driven to the conclusion that the withering of the flower is not brought about by a grave damage to essential parts, but by a slight and local irritation. That it is in no way connected with the germination of the pollen is proved by the fact that dead pollinia cause premature withering almost as readily as living pollen masses. In the course of his experiments, Fitting observed that, whereas "sanding" the stigma induces withering and that only, dead pollinia deposited on the stigma bring about not only this effect, but also the second of the series of post-floration changes enumerated above, namely, the enclosing of the stigmatic surface by its edges and the swelling of the column.

Further experiments indicate that the active agent which brings about this swelling is of a chemical nature and is located not in the pollen grains, but on their surfaces or between them. For example, when the slime was removed from the stigma of *Phalenopsis amabilis* and pollinia placed on it, though the pollen grains did not germinate and became only slightly swollen, nevertheless they caused the column to swell. Acting on the assumption that the active agent in causing the swelling of the column is located on the pollen grains, Fitting tried the experiment of dipping the pollinia in hot water and examining the influence of the extract. When imbibed in a little cotton wool and placed on the stigma, the hot-water extract was found to induce the

swelling of the column. So also when the pollinia were soaked in cold water and the extract applied to the stigma, the swelling of the column was brought about. The conclusion, therefore, is that, whereas premature withering is due to the effects of slightly wounding certain areas of the stigma, swelling of the column is independently produced by a different agent, namely, by a chemical substance, soluble in water, which occurs on the pollen grains.

Both effects may be produced either by "own" pollen or by that of other species of Orchids, and, indeed, by the pollen of plants belonging to other natural orders, *Hibiscus*, for example.

Unlike the preceding post-floration changes, the swelling of the ovary only takes place—as far as is known at present—when the pollen tubes reach the ovary.

It seems fairly clear that the series of changes have all a more or less definite utility to the plant. The closing and withering of the flower render it secure from further visits of pollinating or marauding insects; the swelling of the column and incurving of the edges of the stigma protect the latter and provide, it may be, a supply of water for the germinating pollen grains; the swelling of the ovary is obviously related to the need for accommodating the growing ovules; and the greening of the perianth is probably an indication that food material, available for the seeds, is in course of preparation in that structure.

What is admirable is to see the detailed devices whereby these useful changes are brought about in ordered sequence.

The Orchid raiser who has followed the above account with attention will not have failed to take the hint that crosses which fail may in some cases be due not to sterility, but to a withering of the flower before the pollen tubes have grown down the column into the ovary. He may, therefore, be inclined to try the effect of soaking the pollinia in water for an hour or two before applying them to the stigma. By this procedure he will remove the chemical agent which contributes to the post-floration changes of the flower. Keeping the road to the ovary open for a longer time may make the difference between success and failure of cross-fertilization. The experiment is worth trying, though no good result can be guaranteed.

NOTES FROM A "FRENCH" GARDEN.

THE pricking out of all the Lettuces is now completed; those first planted are already growing freely and will require moderate ventilation.

It is customary to look over the Lettuces and replace those that have failed 8 or 10 days after the transplanting. The dry weather experienced early this month has been responsible for many losses amongst the plants, especially where care has not been taken to make the soil firm at the roots.

Slugs attack Cos Lettuces more than any other kind, and the grower must be careful to replace at the earliest opportunity any that have been destroyed. It is, however, remarkable that, for some reason or other, the Lettuce "Passion" is largely immune from the attacks of this pest. Slugs also cause very little damage among the "Little Black Gott" Lettuce when the plants are well established.

Should mildew make an appearance in some of the cloches careful ventilation must be given, as this will prevent, to a certain extent, the spreading of the fungus.

The ground intended for the second planting of the Cos Lettuces must be prepared at the earliest opportunity, and it is advisable to put under shelter a certain amount of sifted, decayed manure necessary for this planting, as the weather may turn wet and prevent this being done later.

The bell glasses used for this purpose will be at liberty in good time this year, as, owing to

spring, in case the weather would not permit of an early planting in their final quarters. Cauliflowers sown early in October will not be pricked out for another three or four weeks, as it is preferable to plant only strong seedlings at this time of the year.

Whenever possible, the ground occupied by the Onions pricked out early in October, and by Winter Spinach, must be stirred and kept

beds in the open; (2) as soil for planting the Melons in their final quarters; (3) to put in the frames intended for cold work in the spring.

The grower having decided where the various crops will be set next spring, carries this decayed manure where it will be wanted, as he has now time available for this work. *P. Aquatias.*

FLORISTS' FLOWERS.

SWEET PEAS IN TUBS.

SWEET PEAS cultivated in tubs are very useful for some gardens. If large clumps are wanted, the best receptacles are obtained from old paraffin barrels, cut in halves. These can be painted any colour required, and, with the iron bands painted black, are no disfigurement in the garden; but even if the tubs are considered unsightly this can easily be remedied by growing a few trailing plants and letting them hang over the sides. Four or five large holes should be drilled in the bottom for drainage; over these put a good layer of broken pots, and a layer of broken turf and rotted manure, and fill the tub to within a few inches of the top with a good compost of loam, rotted manure, and a small quantity of bonemeal. The compost should be made thoroughly firm as the filling proceeds, as nothing is more detrimental to the plants than loose soil with occasional hollows. If small clumps are preferred, lard buckets can be used instead of paraffin barrels. Two plants may be put in a lard bucket and five in a paraffin barrel. Some varieties are better adapted for tub-culture than others. The 12 I would recommend for a town garden are as follows:—Moneymaker (white, partially waved), Clara Butt (cream), Countess of Northbrook (pale pink), Dusky Monarch (maroon), Mrs. Unwin (scarlet), A. N. Dickson (violet and purple), Paradise Ivory, Masterpiece (lavender), Dazzler (flame-coloured), Countess Spencer (pink), Elsie Herbert (white, with Picotee edge), and John Ingman (rose and carmine).

The chief point to ensure success in tub-culture is strict attention to watering, for as the tubs get full of roots the plants absorb a great deal of moisture. An occasional application of weak manure-water will greatly benefit them during the period of growth. If this is not available, a little Clay's fertiliser, sprinkled on the top of the soil and watered in, will be beneficial. Sweet Peas growing in tubs can be used for covering trellis-work or fences round the garden, or even the yard, provided the plants are exposed to the sunshine. They can also be used for training on pillars of a verandah. Seed-pods should never be allowed to form, or the plants will quickly stop blooming, and all their energies go to the ripening of the seed. By keeping the blooms constantly cut and applying a stimulant now and again it is possible to have bloom from early in June until late in October, and the plants will be capable of growing to a height of 8 feet or even 10 feet. If they should get too tall, cut them back to a lateral growth, and they will grow again and flower profusely. *George Herbert.*

CLEMATIS NUTANS.

THE photograph from which the illustration in fig. 129 was prepared was taken at the latter end of September in Aldenham House Gardens, Elstree. It shows a portion of a plant of the new *Clematis nutans* introduced from China by Wilson, and it well illustrates the free-flowering habit of this plant. The specimen is growing on a shed, which position it has only occupied since the spring of the present year, thus proving it to be a plant of extremely rapid growth. The pendant clusters of creamy-white flowers are produced from the axils of the leaves of the current season's growth. The blooms have a delicious scent, and for autumn flowering the species will be found extremely useful. *E. Beckett, Aldenham House Gardens, Elstree.*



FIG. 129.—CLEMATIS NUTANS, A NEW CHINESE SPECIES: FLOWERS CREAMY-WHITE.

the favourable weather recently, the Lettuces "Little Gott" now under the cloches are forming nice heads.

The Cauliflowers sown in September are well established in their winter quarters, and, when ever possible, ample ventilation must be given the plants. During frosty nights, the shelter afforded by the closed lights will be sufficient, at least until Christmas.

This crop must be grown very hardy to avoid the need of a second transplanting and to prevent the plants from being too strong in the

thoroughly clean. The cultivator reaps the benefit of these hoeings by obtaining earlier and better crops.

All the old manure beds have now been well broken up. This decayed manure, which will form the soil for the frames next spring, will be put in ridges 3 feet wide, 3 feet high and 13 feet apart (from centre to centre) any time during November.

About two-thirds of this decayed manure has been utilised for these ridges. The remainder will be employed: (1) for the top-dressing of the

THE ALPINE GARDEN.

SAXIFRAGA LINGULATA AND SAXIFRAGA LANTOSCANA.

It is curious that such confusion should still exist in gardens over the great Saxifrages of the Maritime Alps. Even the *Kew Hand List* gives *S. florulenta* as a variety of *S. lingulata*. (It only remains now to make *S. longifolia* a variety of *S. Burseriana*.) In cultivation, there are innumerable plants and forms called *S. lingulata*, *lingulata lantoscana*, *lingulata Alberti*, *lingulata albida*, and so forth. Not one of these plants has anything to do with *S. lingulata*; every one of them is a form of *S. lantoscana*, which, so far from being a variety of *lingulata*, is a priceless and definite species, from which the true *lingulata* stands entirely distinct. Under many names, the polymorphic *S. lantoscana* is the glory of our rock-gardens; but *S. lingulata* (though I found it "unbeknownst" in a Midland garden once) has not been recognised in cultivation till this year, and yet, so magnificent is *S. lingulata*, that it makes me wonder if our allegiance may not have to be transferred from *S. lantoscana*.

It is, indeed, under the name of "*lingulata*" that I myself, too blindly confident in gardeners, have long been celebrating *S. lantoscana*; it is fitting now that I should make the due amends to *S. lingulata*. *S. lantoscana* (following the curious local tendencies of the special species belonging to the Maritime Alps) is really restricted to the distinct round St. Martin Lantosque (which has now, by some bureaucratic caprice, been turned into St. Martin Vésubie), where it occurs abundantly, if sporadically, on rocks and shelves of white limestone, always in unsunned northerly or westerly exposures. It is especially notable in the great deep gorge of the Vésubie, making cushions and masses along all the ledges. It varies in size and quality of flower: but Burnat distinguishes as a separate plant (*S. Bellardi*) the Saxifrage which occurs in the eastern valleys towards the Col de Tenda, with *lingulata* and *cochlearis*; and thus restricts the range of true *lantoscana* to its name-district. In cultivation, *S. lantoscana* is honourably distinguished, not only by its startling beauties, but by its willingness to thrive, increase, and multiply. On my westerly-facing cliff it seeded freely in its first year, and now, in its third, is well on the way to reproducing the picture it presents in the gorge of the Vésubie.

S. lingulata has its focus in the upper valley of the Roja, far to the east of St. Martin, round the Col de Tenda. Here, with apparent indifference to aspect, it grows with equal luxuriance in sun or shade, forming wide, plummy masses, and seeding as freely as *S. lantoscana*. (Young plants are, to me, quite indistinguishable from *S. lantoscana*.) It shares its home with the lantoscanish *S. Bellardi* (with which, however, there is no confusion possible), with *Aizoon*, *cæsia*, *diapensioides*, and *cochlearis*. M. Correvon denies any intermediate forms, but Burnat quotes localities for them, and no one who has ranged the Alps of Tenda and seen these species at home can retain much doubt that there are connecting links between at least *lingulata* and *lantoscana*. I, myself, collected one singularly ugly form, whose shape and colour strongly suggested to me that *Aizoon* had spoiled *lingulata*, though the general mass of *Aizoon*s are, as a rule, only just opening when *lingulata* is passing over.

S. lingulata is about twice the size of *lantoscana*. The leaves which, in *lantoscana*, tend to recurve and splay out, stand in *lingulata* much more erect, producing a wild and towzled effect. In *lantoscana* they broaden very markedly and abruptly towards the tip, are of no great length, and, in colouring, are of a characteristic light grey-green, edged with a line of silver. In *lingulata* they are very long and narrow, stiff and wiry, with only the smallest and most gradual expansion at their ends; their ground colour is much greener, with a harsh and very vivid dentation of silver jags at their edge.

Imagine *S. Aizoon paradoxa* multiplied by three and electrified till its leaves all stand on end, and you have a faint picture of *S. lingulata*. The resemblance, indeed, made me fear—for the flower was over—lest *lingulata* might have the stodgy greenish-yellow tone of blossom of *paradoxa* rather than the clean and snowy splendours of *lantoscana*. However, I succeeded in discovering belated spikes, and found to my joy that *lingulata* has flowers as large and round and white as anyone could desire. The spikes are much more freely produced in nature than those of *cochlearis* or *lantoscana*. They are very graceful and plummy in outline, much longer, better proportioned, and more feathery than those of *lantoscana*, arching up and out in a wide sweep, and, so far as I could judge, forming the most beautiful spike in the whole range of the great Silver Saxifrages. The flowers, as I saw them, are big, solid, and snow-white, though there are probably as many variations in *lingulata* as in *cochlearis* and *lantoscana*; or nearly as many, perhaps, for in foliage, at least, *lingulata* is less variable than *lantoscana*, and infinitely less so than the multiform *cochlearis*. I, myself, was only able to note one outstanding variation, which merely took the satisfactory form of unusual size and floriferousness. As to its cultivation, *S. lingulata* is, of course, not yet tested, but I see, from watching the plant at home, no shadow of a reason to doubt that it is fully as amenable and prolific as *S. lantoscana*, with the added advantage of having no objection to hot and sunbaked aspects; though I fancy that it attains its happiest development in cooler cliffs. I hardly need suppose that it is faithful, like so many of its kin, to the mountain limestone. In the Maritime Alps, so far as I have seen, *S. pedemontana* and *S. florulenta* are the only species that are as rigidly granitic in their tastes as all the others are calcareous. The ubiquitous *Aizoon*, however, has no rigid habit, and occurs in limestone quite happily, though its marked preference is for primary formations. *Réginald Ferry*.

ORCHID NOTES AND GLEANINGS.

LÆLIO-CATTLEYA GARNET

(L.-C. LA FRANCE × C. BOWRINGIANA).

This new hybrid was raised in the gardens of W. H. St. Quinton, Esq., Scampston Hall, Rillington, Yorks., and a flower of it has been sent for description by the gardener Mr. F. C. Puddle. The flower adheres closely to *C. Bowringiana* in colour; it is slightly larger, and, strangely enough, the narrow, elongated label-lum of L.-C. La France (*C. bicolor* × *L. tenebrosa*) is not shown in the least degree. The flower is 3 inches across, and has bright mauve-purple sepals and petals. The lip, which is rather more open than in *C. Bowringiana*, has a whitish tube, slightly streaked with purple, and a rose-purple front with a light yellow disc. The petals and sepals have small white bases, and the whole flower is so attractive as to make it a welcome addition to the late-flowering *C. Bowringiana* hybrids.

LÆLIO-CATTLEYA YVONNE

(L.-C. BADEN POWELL × C. FORBESII).

This is an interesting hybrid, though not showy, with rather narrow, cream-white sepals and petals, both slightly tinged with green, the latter having a trace of pink on the veining. The narrow lip has an elongated whitish tube, the front being only slightly expanded. The disc, which shows the influence of the coloured lines seen in *C. Forbesii*, is yellow; the rather flat front lobe and the margins of the side lobes are lilac, prettily veined with rose-purple. *Lælio-Cattleya* Baden Powell is derived from *Cattleya Lawrenceana* × *Lælia tenebrosa*, and both these species may be traced in the hybrid.

The plant flowered in the gardens at Scampston Hall.

NOTICES OF BOOKS.

THE RAINFALL.

SINCE the appearance of the volume of *British Rainfall* for 1908, the British Rainfall organisation has been for the first time placed on something like a permanent footing, the nucleus of an endowment fund having been raised and placed under the charge of trustees, with Dr. R. H. Mill as director. The history of the British Rainfall organization, which is given in the present volume, is most interesting, being a record of one of the finest examples of voluntary work ever undertaken in this country. Mr. G. J. Symons, F.R.S., the founder, carried on the investigation of the rainfall of the British Isles from 1860 until his untimely death in 1900, the results being published by him annually. Since 1900, save for a short interregnum, Dr. R. H. Mill has continued the same work, and on virtually the same lines. Some idea of the extent of this investigation may be gathered from the fact that nearly 5,000 records, mostly of daily rainfall, have to be examined. They are discussed as exhaustively as the income of the organization will allow, this work occupying Dr. Mill and his staff of five assistants from the beginning of each year until nearly the end of August, when the results obtained make their appearance in an annual volume of over 300 pages, entitled *British Rainfall*.

The work of the organization is supported almost entirely by contributions received from the observers, but the contributions are, at the present time, insufficient to defray the expenses which have to be incurred by the director, owing to the rapidly increasing number of rainfall stations in this country and to other causes. The director himself receives no remuneration whatever. If even one half instead of only about one-third of the observers were subscribers to the general fund, the British Rainfall organisation would be entirely self-supporting.

The present issue* is typical of the whole series, with various additions and improvements, which have been inserted from year to year in order to make the examination of the numerous records more complete and of greater value.

The following particulars may serve to illustrate the comprehensive and thorough manner in which the question of rainfall is treated in these annual volumes. For instance, suppose we require to know the wettest and driest localities in 1909, we have only to turn to the chapter on "Extremes of Rainfall" in order to learn that the heaviest fall in the British Isles was 176 inches at the Styx (C) in Cumberland, whereas only 19½ inches of rain fell at Fortrose, Hollyside, East Ross. The rainfall maps for the different months in the year are very helpful, as they show at a glance where the fall of rain was unusually heavy and where it was below the average. For instance, in the maps for February, which proved the driest month in the British Isles in the year under review, there is only one small area where the rainfall in any way exceeded the average. Whereas in the next month, March, the wettest of the year, the only parts of the country with less than an average fall were situated in the West of Scotland, the West of Ireland, and in the English Lake District, which are usually among the wettest districts in these islands. Then as regards percolation, at the experimental station at Rothamsted, Herts., which is under the direction of Mr. A. D. Hall, F.R.S., the total rainfall of the year was 28½ inches, of which amount only about 16 inches came through the soil in the percolation gauges, which are respectively 20, 40 and 60 inches deep. In the winter half of the year, nearly the whole of the rainfall passed through those gauges, whereas in the summer half, when the total fall of rain was, as it happened, practically the same as in the winter half, only about 4 of the 14 inches of rainfall came through either of those gauges. Taking the country as a whole the dry

* *British Rainfall for 1909.*

periods were fewer and less protracted than usual. In fact, the number of absolute droughts are stated to have been 7 below, and the partial droughts 15 below the average. Sufficient has, however, we think, been said as to the valuable and interesting character of the information provided in this, the latest, volume of *British Rainfall* to make readers wish for a closer acquaintance with its contents, for we all know how greatly our gardens are affected at any time by either the excess or lack of rain, and more particularly during the growing period of the year. *Edwd. Mawley.*

FRUIT BOTTLING.*

THIS little book seems to be exactly what is wanted in the home. It describes a method of bottling fruit which is practicable in a home of limited means, where, during a glut of fruit, much is often wasted, owing to an erroneous belief that an expensive apparatus is required to preserve it. By Mr. Stoney's method it may be done in any cottage at small cost and with very little trouble. The recipes of home-made jams, wines and pickles, written by Mrs. Stoney, should contribute to the success of this useful little book. *A. A. P.*

NURSERY NOTES.

TULLY NURSERY, Co. KILDARE.

(See figs. 131 and 132, also Supplementary Illustration.)

TULLY is only an hour's journey by train from Dublin, but is situated in open country, with a delightful atmosphere and ideal climatic conditions and soil for gardening. With such conditions, it is not surprising to find in the Tully Nurseries, belonging to Col. Hall Walker, M.P., luxuriant vegetation, but before describing in detail the more interesting of the plants met with, it may be well to give an account of the garden and the ideal which it represents. The true Japanese garden has a story to relate, a plot to unfold, and, as a painting reveals the ideals of the artist, so also should the mind of the garden artist be revealed to those who walk therein. The prevailing theme in such gardens is the one selected in the Tully garden, viz., the walk or journey of life.

Emerging, as it were, from the dark unknown, the garden is entered by a plain, simple gate, and the first scene is the brightness and freshness of "birth," portrayed by the brightest of coloured foliage in profusion. Then is seen the playground of "infancy," where there are plenty of placed stones, "finnickin" gardening, and a lantern. Certainly there are no difficult problems here to solve. Following on, "school life" is represented by a cave and the old Japanese idea of one teacher, one child. This cave is beautifully overhung and surrounded by *Cotoneaster horizontalis*.

"Youth" and its uncertainty is depicted by another cave, with more than one exit, the right path therefrom ascending by rockwork steps, through pretty scenery, provided by Saxifrages and other plants, to a spot which commands a bright prospect.

Proceeding, a "danger spot" is found, for a "pitfall" has to be avoided, and a valley, that of "Doubt," is entered. The serious aspect of life appears, the hard, monotonous plodding has to be encountered, with a swamp to negotiate, in which, however, there are safe stepping-stones. A choice has to be made between a sharp deviation to a rugged height with a blank end, a second path and an easy one which ends in a morass, and a third which leads by a gradually-inclined path into a pleasant high ground, with luxuriant vegetation such as Bamboos, giving the ideas of comfort and reality. Beyond is seen a tempting prospect: golden *Ligustrum* with relief of *Berberis vulgaris purpurea*, a fairly even

path, winding amidst rocks, and, on one side, overhanging a ravine depicting the business life leading to the bright goal.

The pleasures, by the way, may be said to be represented by such beautiful subjects as Saxifraga "Guildford Beauty"—a mass about 7 feet through—and other lovely gems of the Alpine flora. The culmination point is the mound or "Hill of Ambition," to the summit of which only one of the numerous paths lead. Having gained this, a retrospective view of the journey is obtained, the various deliverances and escapes surveyed, the pleasant episodes recalled, with the pleasing reflection that comes from having trodden the path of honourable dealing. By the pathway of "Integrity," this scene is left behind, the wayfarer now leaves "activity," and enters by running waters into the repose of the



[Photograph by G. W. Leak.]

FIG. 130.—GLADIOLUS "SAFRANO": COLOUR YELLOW, SHADED WITH BUFF.

"House of Comfort," whence he surveys in the distance the calm and restful "Garden of Peace," leading to which there are almost invisible stepping-stones in the even sward.

Such then is the legend very inadequately described, which is carefully and faithfully treated, in its many details in this really artistic garden. Lanterns in stones, cascades and bridges have their places, and a huge landscape is reproduced in miniature. Many large Scotch Firs have been imported into the garden from a considerable distance, some of the trees weighing as much as 8 tons; all, with one exception, are thriving, the one exception being very fittingly in the "Garden of Peace" or cemetery. The more gnarled these trees, the better for their purpose, and I noticed that the manager, Mr. Paine, has

so far caught the Japanese "dwarfing fever," that he is successfully operating upon many of the trees. At the entrance to the garden there is a recently-planted Scotch Fir, 25 feet high, of a dwarfed and grotesque form, sheltering one of the orthodox stone lanterns. The characteristic dotting of plants in the grass entails much extra labour in mowing and clipping the sward, and, to our Western ideas, is very fussy. The Japanese gardener is, however, dealing with a dainty picture, every detail of which demands constant supervision. Near the garden tea-house is a model garden, a perfect piece of work, showing the usual mounds, water, bridge, paths, and forest. If my memory serves me aright, this was made by Col. Hall Walker himself. On either side of a cascade stand two grotesque figures, water guardians, and leading from the waterfall is a Heather walk which is very interesting, as is also a Water Lily pond. *Acæna Buchanania* forms a very appropriate ground or setting to one of the lanterns. The native Saxifrage, *S. hibernica alba*, is very effective, and a form of *S. Camposii* named The Pearl, raised by Mr. Paine, is also good, among a host of other fine varieties. The Wistaria roof-garden is an indispensable feature in a Japanese garden, and one to be copied in other styles with advantage, especially in the south and west of England. I am tempted to mention other of the good plants I observed in this interesting section, but will only name *Lithospermum Gastonii*, the specimen being 4½ feet across. Before leaving this garden, I must refer to an Elm tree, formerly growing upright, but now undermined on one side so that it leans half over a water-way; the tree seems perfectly reconciled to its new conditions. *Dicksonia antarctica* survives the winters safely, whilst a fine batch of *Lilium giganteum* greeted my exit through a long pergola leading from the Japanese garden. Masses of *Gunnera* flourish near a pond which is being surrounded by garden effects.

So far, my note has mentioned nothing to indicate a nursery. But Col. Walker is so convinced of the possibilities of the soil and climate for plant-growing, that, in addition to the ornamental and pleasure gardens, about 30 acres have been devoted to raising stocks of choice, rare, and new plants. Already, I was informed, there are a million seedlings handled, or about to be, including thousands of *Morisia hypogæa*, for instance, *Aquilegia alpina* (true), double-flowered *Celandine*, *Pyrola rotundifolia*, from seed collected in Ireland; Saxifrages in great numbers and varieties, *Agrostemma* The Pearl, *Androsace primuloides*, *Shortia uniflora*, seedling *Gerberas* and seedling forms of *Campanula barbata*. Some wonderfully fine hybrids of *Gladioli* arrested my attention, and St. Bridgid's *Anemones* were observed in all stages and in all colours. Several plants not in commerce were noticed, of which more will be heard in due course. A new *Astilbe* seen in flower is a cross between *A. Davidiana* and *A. (Spiræa) Queen Alexandra*, carrying a bold spike with flowers intermediate in colour between the parents.

Convenient structures, in the way of green-houses, frames, offices, commodious bothies, sheds, &c., speak of design, method, and enthusiasm. Under the intelligent management of Mr. W. H. Paine, this hobby of Col. Hall Walker cannot fail to be a successful one. *Visitor.*

GLADIOLUS "SAFRANO."

THIS variety of *Gladiolus* (see fig. 130) was exhibited at a meeting of the Royal Horticultural Society on August 30 last by MM. Vilmorin et fils, Paris. It will be seen that the flower-spike is unusually regular, being closely set with fine, yellow blossoms shaded with buff, and stained with crimson near the base. Moreover, the petals are pleasingly frilled, making the variety one of great beauty. The variety received an Award of Merit from the Floral Committee.

* *A Simple Method of Bottling Fruit at Home*, by Mr. J. Stoney, Instructor of Horticulture to the Staffordshire County Council. Price 6d.

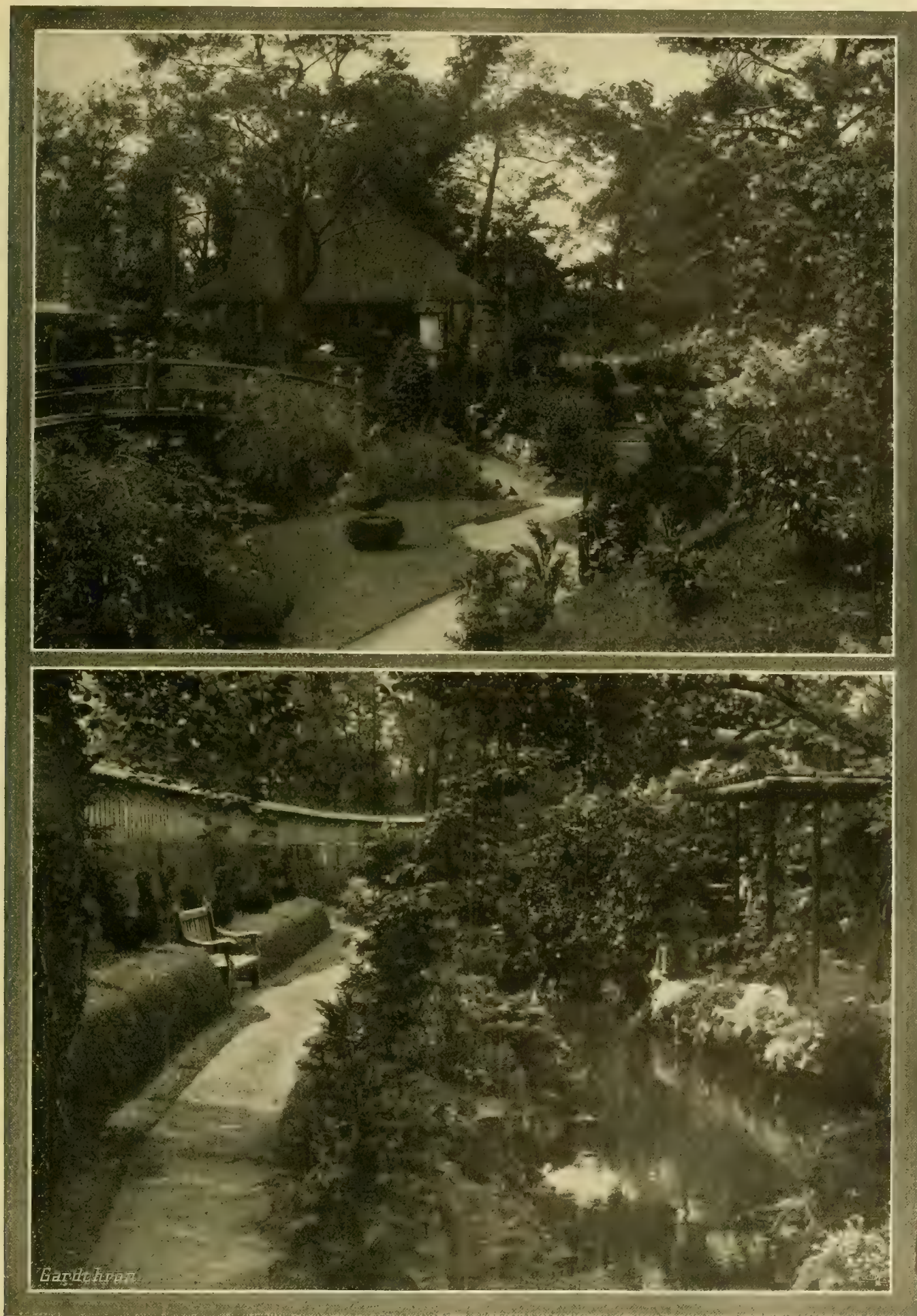


FIG. 131.—VIEWS IN THE JAPANESE GARDENS AT THE TULLY NURSERIES.

ELECTRICITY IN HORTICULTURE.

DURING the past summer a small installation belonging to Miss E. C. Dudgeon has yielded interesting results. The apparatus consists of a 1½ h.p. gas engine, a 60 volt dynamo, a suitable transformer, and five of Sir Oliver Lodge's patent valves. The current leaves the engine-house at a potential of some 80,000 volts, and is taken along a wire fixed round specially-made insulators, supported by ordinary telegraph poles, about 15 feet above the ground. Generally speaking, the discharging apparatus was at work whenever the weather was suitable. On very bright days it was only turned on for about two hours at sunset; on fine but dull days, the discharge was kept on for four or five hours, and in showery weather as often as the wires were sufficiently dry. It was used regularly after May 30, except for two weeks, the last weeks in June, and from July 7, to 14, when repairs had to be made.

The experimental plot is on ground belonging to Miss Young, Lincluden House, near Dumfries, and amounts to about ¼ acre. It had been previously used for Potatoes and other root crops for four successive years, and had, during that time, received very little manure. Unfortunately, no ground was available for satisfactory control experiments, but an attempt has been made to compare the results with other crops grown without electricity in the neighbourhood.

Oats.—Variety, Potato. A plot, 60 feet by 20 feet, received electrical discharge for 177 hours during the summer. The soil in this place is shallow, and the only manure employed was a light dressing of kainit. The seed was sown on March 28, and the leaves were visible above ground on April 18; the crop was fully ripe and harvested on August 11. It was an unusually luxuriant one; some of the plants had tillered abundantly, 27 shoots being counted to a single seed. The length of straw varied from 5 feet 10 inches to 6 feet 3 inches. No conclusions could be drawn as to the yield of grain. The attacks of sparrows and the necessity of moving the sheaves to get them dried made it impossible to weigh the seeds in a satisfactory manner. The quality of the grain was excellent.

A field about 150 yards away, and 25 feet higher, had been sown with the same variety on the same day. It was considered that the soil was richer in manure in this field than in the electrified plot, and also that there was less shelter from trees. The Oats in this field did not ripen until about eight to ten days after those under the discharge. The length of straw varied from 4 feet 6 inches to 4 feet 10 inches, and was obviously very much smaller in amount. The quality of the grain was not so good.

Potatoes.—A small quantity of Early Midlothian was grown under electricity, and yielded a good crop of quite satisfactory tubers. No difference was, however, perceptible in quality between these electrified Potatoes and others grown without electricity. Two rows, amounting to 120 feet in all, of the variety Factor were grown in the plot, and received electric discharge for altogether 224 hours. Former crops of Potatoes had been badly diseased; the place is almost surrounded by trees, and appears to be very favourable to the development of blight. The foliage of the plants was, however, remarkably luxuriant, and, up to August 24, there was no sign of disease. Although injured, the crop was an excellent one. Miss Dudgeon found that those plants which were directly under the discharge wires were very slightly affected. The tubers were firm to the touch, and were excellent when cooked.

As Mr. Matthew Wallace had some of the same variety at Terreglestown, about 1½ miles distant, a comparison was made between a measured length in his field and the electrified plot. His field had been manured abundantly, and the plants grown under more favourable conditions. The results were as follow:—

Potatoes "Factor."	Lincluden Electrified.	Terreglestown Non-electrified.
Length of row ...	120 feet	128 feet
Ware over 12 inch ...	137 lbs.	184 lbs.
" " 14 to 12 inch ...	126 lbs.	17 lbs.
" average 1 lb. each ...	10 lbs.	—
" small ...	40 lbs.	—
" diseased ...	59 lbs.	54 lbs.
Tubers Total weight...	370 lbs.	255 lbs.

So that, excluding all under 1½ inches and diseased tubers, a shorter length of row yielded 265 lbs. under the electric discharge, as compared with 201 lbs. without electricity. The yield of the plot under electricity works out at about 23 tons per acre.

Beetroot.—A row 60 feet yielded: Electrified, 93 lbs.; non-electrified, 84 lbs.

Peas.—A row 60 feet in length, sown with the variety "Quite Content," yielded a splendid crop. The stems were 7 feet high, most of the pods had nine Peas, and the flavour was excellent. Those grown in the adjoining garden, from the same seed, were in every way inferior. The roots of the electrified plants were specially well developed, and had a much larger number of tubercles.

Strawberries.—Those grown under the electric discharge were of a better quality, and lasted three weeks longer than those grown in the garden. The foliage was also more luxuriant. Certain plants which had produced fruit under glass in April gave a second crop in the electrified plot.

Onions.—This crop was badly attacked by insects, but, on the whole, those plants grown under the discharge were much better, both in bulb and foliage, than those grown outside.

Next year it is intended to extend the experiment over 6 acres, and to include a satisfactory control plot. The results certainly warrant further experiment. *G. F. Scott Elliot*

The Week's Work.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Surrey.

Vanda.—The end of October or the beginning of November is the best time of the year to thoroughly overhaul all plants of the section embraced by *V. tricolor* and *V. suavis*, especially if any disturbance at the roots is necessary, as there will be far less loss of foliage than when the operation is performed at any other season. These plants do not appreciate sunlight at any time, and now that the sun is daily decreasing in strength, and the external air is cool and moist, a suitable atmosphere can easily be maintained for them at the coolest end of the Cattleya or intermediate house. A cool, shaded position is of the greatest assistance towards the re-establishment of the plants without loss of foliage, whereas, when the operation is performed in the spring or early summer, the increasing strength of the sun is unfavourable to them in every particular. Repotting at this season is also favourable to the production of fresh roots, and the retention of the lower leaves. It is principally "leggy" specimens that will need repotting, and in the case of such plants, it will be necessary to remove the old potting material and drainage. If the base of the stem can be cut off, so as to bring the lowermost leaves down to almost the rim of the pot, without disturbing the old roots that are clinging to the sides of the receptacle, so much the better. When it becomes necessary to take a plant out of its pot, these old roots should be detached with the least possible injury. In repotting, keep the stem of each plant in the centre of the pot, and carefully work the lowermost roots around the bottom, intermixing with them clean crocks to about half the depth of the pot. Over these place a layer of Sphagnum-moss, spread the other roots over the surface and work among them and the remaining roots some clean, picked Sphagnum-moss and small broken crocks. Press the materials down moderately firmly and fill the pots to the rims, surfacing the whole with fresh, healthy Sphagnum-moss placed in a conical manner. The taller plants should be secured to a strong stick to hold them firmly, and to keep them in an upright position. It is very important to fix them firmly, as the least swaying will cause the lower leaves to turn yellow and fall off. In tying the plants, use broad, flat pieces of bast or matting, so as to prevent any injury to the base of the leaves. Plants that are furnished with leaves to the rims of the pots, should not be disturbed, but if the rooting materials have become sour or decomposed, they should be removed carefully down to the drainings and fresh moss substituted. Any of the large, fleshy roots that are pliable may be pegged to the surface of the moss, into which they will enter. The more

roots that can be induced to grow thus, the better it will be for the welfare of the plant. Throughout the year it is good practice to tie in the aerial roots gradually, and to guide as many as possible down to the compost. The repotted plants must be shaded from sunshine, and their immediate surroundings should be kept thoroughly moist at all times. For several days, or perhaps a week after potting, afford them no water at the roots, as the moisture from the moss will be sufficient for them, but after that time a thorough watering will be necessary. The moss on the surface will soon become fairly dry again, and it should be sprayed as often as is necessary to keep it in a healthy-growing condition. Vandas of this section should be placed on a cool, moist stage: open woodwork stages should be covered with thin slates, over which is placed a layer, about 4 inches in depth, of finely-broken coal, which always looks clean, and retains just sufficient moisture. There are several distinct varieties of *V. tricolor*, all of which are well worthy of cultivation, viz., *V. t. planilabris*, *V. t. Pattersonii*, *V. t. Dalkeith variety*, *V. t. Veitch's variety*, *V. t. suavis*, *V. t. tenebrosa*, and *V. t. pallida*. These Vandas, when well grown, form very handsome plants, with their symmetrically-arranged leaves, and when several are in bloom, the perfume from the deliciously-scented flowers pervades the whole house. A group of Vandas furnished with leaves as low as the rim of the pot, whether in or out of bloom, is an imposing feature in the Orchid house, and for this reason alone the plants are deserving of more general cultivation.

THE KITCHEN GARDEN.

By JOHN DUNN, Kitchen Garden Foreman, Royal Gardens, Windsor.

Beet.—The latest batch of this vegetable should be dug up without delay and stored. Take care that the plants are not rubbed or scratched, as this may cause bleeding, the roots thereby losing some of their quality. Do not cut off the leaves, but remove them with a twist. Beetroots should be stored in a frost-proof shed or cellar, as they soon deteriorate through frost.

Turnips.—Roots which are large enough for pulling should be removed from the ground, as they would be of little value as a vegetable when hard through being old. Place them in pits in the open, covering them with straw or Fern in sufficient quantity to keep them dry. The plants of the latest sowings may be allowed to remain in the ground until very cold weather sets in, when all the roots that are of sufficient size should be pulled and stored in some frost-proof place. Those that remain may be allowed to grow until the spring, when they will be found useful, either for their roots or their tops, which will furnish Turnip-greens.

Celery.—The final earthing-up of this crop should be done immediately. Let the soil be broken as finely as possible, placing it carefully around each plant with the hand, at the same time taking care to keep the centre of the plants free from soil and open to the air. It is a mistake to place the soil too high about Celery at any time.

Green vegetables.—Decaying foliage should be removed from Brussel Sprouts and other green vegetables, and the ground raked and generally made tidy before the season is far advanced. A free circulation of air is necessary about the stems and lower parts of the plants to harden them before the winter sets in, therefore the removal of dead leaves and weeds is necessary. Spinach, in particular, should be examined for the purpose of removing all spotted and overgrown leaves. In this case also hoe the ground between the rows frequently, and, if slugs are troublesome, apply a dressing of soot.

Tomatos.—Plants raised from seeds sown in the latter part of September are ready for potting into small 60's pots. A suitable soil consists of loam and leaf-mould in equal quantities. After the plants are potted, stand them near to the glass in a pit, keeping the ventilators closed for a few days until root-action has commenced, when plenty of fresh air may be admitted to induce a sturdy growth. This is probably the most important batch of Tomatos grown throughout the whole year, as the plants will furnish a supply of ripe fruits before Easter, provided they are grown in a house with a southern aspect.

THE HARDY FRUIT GARDEN.

By A. R. SEARLE, Gardener to the Marquis of NORTHAMPTON, Castle Ashby, Northamptonshire.

Strawberry beds.—The plants should be looked over once more, and any runners found upon them should be cut off. Let the surface soil between the plants be lightly hoed, and all weeds and rubbish removed, then apply a good mulch of decayed manure. It is essential that this work be done early, in order that the autumn rains may wash the manurial properties from the mulch down to the roots, and so assist the plants to complete the maturing of their crowns before cold weather sets in.

Morello Cherries.—The trees may now be pruned at the first opportunity, and an effort should be made to get this work well in hand before there are hard frosts. Cut out all shoots which have borne fruits this season, and cut back to two or three eyes the new growths not required to be trained in. When the pruning is completed the trees should be detached from the walls, and all shoots and branches thoroughly washed with some approved insecticide. The main branches may then be temporarily secured to a few stout stakes to hold them away from the wall whilst the latter is thoroughly cleansed. Soluble paraffin is useful for this purpose with a little flowers of sulphur well mixed in with the solution; it should be applied with force by means of a garden engine to make sure of it reaching every crevice. When the cleansing is completed, the branches may be again placed in position. Tie or nail in the main branches first, placing them evenly, so that the trees present a well-balanced appearance when the training is finished. After the main branches are secured, the young growths should be laid in at distances of not less than 4 inches apart; always use clean shreds and nails, and should any of the old nails be used again, steep them for a few minutes in boiling water in order to destroy red spider or any other insect pests that may be upon them. When the training is finished, gather up the prunings and place them on the rubbish heap to be burnt. Should any of the trees show signs of weakness, they may be improved by removing the surface soil down to the roots, and replacing it with a loamy compost containing mortar rubble and wood ashes, with a sprinkling of bonemeal. This compost should be made quite firm about the roots.

THE FLOWER GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Hertfordshire.

The herbaceous border.—The work of replanting hardy herbaceous borders may now be proceeded with. Planting at this season has many advantages, for, whether new borders are to be formed, or the plants in those already existing merely divided and rearranged, it is best done when the weather is open and the nature of the various subjects may be still identified. Where it is intended to renovate entirely borders already existing, or to plant fresh ones, the ground should be thoroughly well trenched and enriched. In many instances existing borders might be considerably improved if the plants were lifted and the ground treated in this manner. Herbaceous plants are often allowed to remain undisturbed for a number of years, and yet other parts of the garden are cultivated annually. But, before trenching is attempted, care must be taken to dig up and lay by in a convenient place near at hand the whole of the plants, taking every precaution to preserve the labels of the various kinds. The plants should be laid in the soil temporarily, or well covered with mats or some other material that will protect the roots. If possible, trenching should always be done in preference to ordinary digging, and the ground treated liberally with manure, moving the soil to a depth of at least 2 feet 6 inches. The nature of the soil should govern, to a great extent, the material used for incorporating with it: much may be done to improve a heavy or a light soil by the addition of suitable materials. When the ground has sufficiently settled again, planting may be commenced. This should be done when the weather is open, and not when the ground is wet. Knock the ground down well with the fork to ensure a suitable surface for planting. Before commencing this, the border should be marked out, and the positions for the larger and more important subjects indicated, for, unless

this is done, much confusion will arise. The heights of the various plants, their habit of growth, colour of the flowers, and the season of blooming are important points to remember when establishing a mixed border. Avoid planting large portions of any particular subject—a common mistake. I prefer placing three small clumps in a triangular manner, if a mass is required. It is surprising how quickly the various subjects grow when planted properly, and division of the clumps increases the vigour of the plants in a marked degree. The best method of dividing the crowns is by placing two forks back to back and levering them apart. This is much to be preferred to chopping them apart with a spade. Plant firmly, and mark with a stick the positions of those plants that are entirely covered with soil. Proper labelling is an important part of the work, and, when neatly and legibly carried out, is not only necessary and educative, but adds a pleasing finish to the work. When completed, the ground should be levelled in the neatest manner possible, and the whole surface top-dressed with spent manure from a Mushroom bed, or other material of a suitable nature. Surplus plants of a robust character may be planted in spare places, and will prove useful for furnishing a supply of cut blooms. Where ample ground is available, these surplus plants may be placed in rows.

FRUITS UNDER GLASS.

By B. GOODACRE, Gardener to Sir ERNEST CASSEL, G.C.B., Moulton Paddocks, Newmarket.

Pineapples.—Where manure has to be relied upon for supplying the necessary bottom heat, it will be advisable to renew parts of the hot-bed to keep up the required temperatures, which should not be lower than 75° to 80°. The best plan is to remove the plants, throw out the old material on to the path, and then mix the new dung with it in the proportion that is considered suitable. A few fresh leaves added at the same time will have the effect of preventing a too rapid fermentation, thus causing the bed to be longer of service. When forming the bed, arrange it so that the plants may be set close up to the glass without allowing the leaves to actually touch it. As frost may appear at any moment, it will be advisable to prepare a quantity of long litter, stored near at hand, so that it may be thrown over the roof when severe cold is imminent. By doing this, a proper temperature can be maintained without employing excessive fire heat, as this has many disadvantages; amongst others, it encourages the increase of insect pests. Those plants that are fruiting should be treated as advised in a previous Calendar. Manure water must be given them regularly until the fruits show signs of ripening, when stimulants must be withheld, and the amount of water given to the roots gradually reduced. A dry, buoyant atmosphere is needful to produce the best flavour in the fruits, therefore it will be necessary to circulate a little heat in the hot-water pipes, so that the ventilators may be opened a little to keep the air moving.

Successional Pines.—The night temperature should be reduced to 65° or 60°, as high temperatures would have the effect of causing too rapid a growth. Besides, a slight rest now will be of great assistance to the plants, its effect being seen later in the season.

Fig trees in pots.—The plants will continue to supply a few fruits for some time yet, provided they are managed carefully, although the flavour of the Figs will be poor compared to those that ripened during the summer. Syringe well the bare spaces between the pots on fine bright days, but not overhead. Pay careful attention to the watering of the plants, and continue to apply liquid manure at intervals. Maintain a night temperature of 65°, allowing a rise of about 10° during the day.

Perpetual-fruited Strawberries.—Plants which are carrying ripe fruits must be kept on the dry side, affording water just sufficient to prevent the foliage from flagging. The best place for the plants is a shelf near to the glass, in a cool, airy house. In such a position they will enjoy a free current of air on all sides, and be safe from the attacks of vermin. Runners of perpetual-fruited varieties that were placed in thumb pots some time since may now be stood in their winter quarters. If they are plunged in ashes in a cold frame they will be secure against

frost. The lights may be removed entirely during mild weather, and at all times, except during very severe weather, the frame should be freely ventilated.

Alpine Strawberries.—Both the red and the white-fruited varieties have been providing a useful supply of berries for some time past, and will continue to do so for a few weeks longer. Strawberries require fine weather to produce their best flavour; during dull, damp days, they ripen very slowly. It is best to maintain a dry, warm atmosphere in the house, using fire-heat freely whenever it is damp and cold. Watering should be done in the early part of the day, so that most of the moisture is dissipated before night arrives. The plants are very susceptible to attack of red spider, but as they will be of no further use when the fruits are gathered, it is not necessary to employ insecticides, as this might affect the flavour of the berries.

PLANTS UNDER GLASS.

By JOHN DONGHUE, Gardener to JOSEPH PICKERSGILL, Esq., Bardon Hill, Westwood, Yorkshire.

Roses in pots.—It is a suitable time to make a selection of new Roses for pot culture, and it will be advisable to give the order to the nurseryman early, as the best plants are usually sent out first. The stock of Roses in pots that have been standing out-of-doors all the summer should now be made ready for placing in the houses. Prune the shoots well back to sound, ripened wood, overhaul the drainage material, give the pots a thorough cleansing, and then syringe the plants with a specific for mildew. Forcing should commence steadily; the atmospheric temperature of the house must not be allowed to exceed 45° at night time for a start, with a few degrees increase during the day time. As the plants make their growth higher temperatures may be afforded. The Rambler Roses are almost indispensable for pot culture, and, for general purposes nothing is better than either Dorothy Perkins or Lady Gay. But these Roses can only be brought into bloom early when they are thoroughly established in pots, for although specimens that are lifted carefully and potted may be brought into bloom several weeks earlier than the outdoor plants, the best success is obtained with those that have been established in pots for at least one season. The dwarf sorts of Polyantha Roses such as Baby Dorothy and Mrs. W. Cutbush are very serviceable as pot plants. The latter variety is almost a perpetual bloomer, provided it is kept steadily growing and supplied with liquid manure occasionally.

Maranta.—These ornamental-leaved plants should not be encouraged to grow throughout the winter months, as they need a season of rest. They should, therefore, receive a reduced amount of moisture, and be staged in the intermediate plant stove.

Euphorbia (Poinsettia) pulcherrima.—Batches of this useful winter-flowering plant should be placed in a structure having an intermediate stove temperature. The roots may be fed with clear soot water and liquid manure given alternately with ordinary waterings; an occasional sprinkling of some chemical fertiliser will also be of benefit. But it must be remembered that Poinsettias may be injured by over-feeding, as well as too much moisture applied to the roots. Give the plants plenty of space, so that they may retain their foliage, crowding often causing the bottom leaves to drop.

Caladium.—The corms may be stored when thoroughly ripened in a dry place and clear of dripping moisture, in a temperature of about 55°. It is best to allow the corms to remain undisturbed in their pots, but if this is inconvenient they may be placed on a layer of cocoanut fibre. When they are in the pots, they are not so liable to become shrivelled, and shrivelled corms do not start freely into growth.

Begonia Gloire de Sceaux.—The beautiful metallic-tinted foliage of this Begonia renders it a delightful subject for arranging in collections of other plants, whilst its rose-pink blossoms are an additional charm. The plant is a cross-feder, but as it is necessary to restrict the roots in small pots, in order to induce a free flowering, stimulants must be given occasionally, and great care afforded in watering. In a general respect the culture adopted for Begonia Gloire de Sceaux will suit the variety under notice.

EDITORIAL NOTICE

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Special Notice to Correspondents.—The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

Local News.—Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

APPOINTMENTS FOR NOVEMBER.

TUESDAY, NOVEMBER 1—Brighton Chrys. Sh. (2 days). Bournemouth Fl. Sh. (2 days). Scottish Hort. Assoc. meet.

WEDNESDAY, NOVEMBER 2—Kent County Chrys. Exh. at Blackheath (2 days). National Chrys. Soc. Exh. (3 days).

THURSDAY, NOVEMBER 3—Torquay Autumn Fl. Sh.

FRIDAY, NOVEMBER 4—Derby Gard. Assoc. Chrys. Sh.

SATURDAY, NOVEMBER 5—Soc. Franç. d'Hort. de Londres meet.

TUESDAY, NOVEMBER 8—Royal Hort. Soc. Coms. meet. (Lecture at 3 p.m. by Mr. Cecil H. Hooper, on "Observations on the Blossoming of Hardy Fruits.") Birmingham & Midland Counties Chrys. Sh. at Bingley Hall (3 days). British Gard. Assoc. Ex. Council meet. Ulster Hort. Soc. Sh. at Belfast (2 days). Oxford Chrys. & Fruit Sh. Southampton Chrys. and Fruit Sh. (2 days). Worthing Chrys. Sh. (3 days). Finchley Chrys. Sh. (2 days).

WEDNESDAY, NOVEMBER 9—Northampton Chrys. Sh. (2 days). Bath Gard. Soc. Chrys. Sh. at Assembly Rooms, Bath (2 days). Liverpool Hort. Assoc. Autumn Sh. (2 days). Highgate & Dist. Chrys. Sh. (2 days). Doncaster Chrys. Sh. (2 days).

THURSDAY, NOVEMBER 10—Wandsworth & Dist. Chrys. Sh. (2 days). London Branch of B.G.A. meet. Weston-super-Mare Chrys. Sh.

FRIDAY, NOVEMBER 11—Sheffield Chrys. Sh. (2 days). Altrincham Chrys. Sh. (2 days). Chrys. and Fruit Sh. at Corn Exchange, Mark Lane. Huddersfield Chrys. Sh. (2 days).

MONDAY, NOVEMBER 14—United Hort. Ben. & Prov. Soc. Com. meet.

TUESDAY, NOVEMBER 15—York Chrys. Sh. (3 days).

WEDNESDAY, NOVEMBER 16—Scottish Hort. Assoc. Chrys. Sh. (4 days).

THURSDAY, NOVEMBER 17—Barnsley Chrys. Sh. (2 days).

FRIDAY, NOVEMBER 18—Leeds Paxton Soc. Chrys. Ex. (2 days).

TUESDAY, NOVEMBER 22—Royal Hort. Soc. Coms. meet. (Lecture at 3 p.m. by Mr. Jas. Hudson, on "Plants in Congenial Positions.")

FRIDAY, NOVEMBER 25—Aberdeen Chrys. Sh. (2 days).

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich—46° 6'.

ACTUAL TEMPERATURES:—LONDON.—Wednesday, October 26 (6 p.m.): Max. 58°; Min. 53°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, October 27, (10 a.m.): Bar. 30.0; Temp. 55°; Weather—Overcast.

PROVINCES.—Wednesday, October 26: Max 59° Ireland S.W.; Min. 49° Yorkshire.

SALES FOR THE ENSUING WEEK.

MONDAY, TUESDAY, WEDNESDAY, THURSDAY, AND FRIDAY—Dutch Bulbs at 67 & 68, Cheapside, E.C., by Protheroe & Morris at 10.30.

MONDAY—Roses, Special Sale at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.30. Clearance Sale of Market Garden Crops, Glass, Piping, Implements, &c., at Crab Tree Farm, Fulham, by Protheroe & Morris, at 12.

MONDAY, TUESDAY, WEDNESDAY, AND THURSDAY—Seventeenth Annual Sale of Nursery Stock at the Milford Nurseries, near Godalming, by order of Messrs. M. Young & Son, by Protheroe & Morris, in conjunction with Messrs. Mellersh, at 12.

TUESDAY—Sale of Fruit Trees and other Stock, at the Nurseries, Farington, Berks, by order of Messrs. R. Tucker & Son, by Protheroe & Morris, at 12.0.

WEDNESDAY—Twelfth Annual Sale of Nursery Stock, at Shortlands Nursery, Shortlands, Kent, by order of Mr. J. B. Bryant, by Protheroe & Morris, at 11. Sale of Duplicate Cypripediums at The Coal Exchange, Manchester, by Protheroe & Morris, at 1.00. Azaleas, Rhododendrons, Palms, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 5.

THURSDAY—Sale of Nursery Stock, at The Nurseries, Richmond Road, Twickenham, by order of Mr. H. E. Fordham, by Protheroe & Morris, at 1.30.

FRIDAY—Choice Established Orchids, by order of Sir J. Colman, Bart., and others, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

A recommendation has been made by the Fruit and Vegetable

Committee to the Council of the Royal Horticultural Society that a trial of varieties of Sugar-beets should be conducted at Wisley next year. Without doubt, Beet culture for Sugar production is just now once more in the public mind, as indeed, having regard to the importance of Beet-sugar, it is right that it should be. Of ordinary garden Beets grown for domestic use or market sale, there seem to be myriads, all sweet, all giving colour and flavour, and in most cases of very handsome form; still, none of these give such a percentage of Sugar as would render their cultivation for Beet-sugar profitable. In that admirable book, *The Vegetable Garden*, there are descriptions of some 12 Sugar-beets. The majority of these are white, and all are long or tapering. Possibly, since the issue of that book, other varieties have been raised. In any case, seedsmen at home and abroad would readily help the Council to obtain stocks, and thus secure, so far as varieties are concerned, a trial of exceeding interest. But in an economic sense, any trial to show practical or commercial values must include average weight of root-crop per acre, and also percentage of sugar obtained from the roots of the diverse varieties. In order to secure satisfactory results, at least one rod of each variety should be sown, and the Sugar-content of the produce estimated by the polarimeter, according to the method in use in the Beet-sugar factories of the Continent. Certain varieties, such as the French white red top and the white green top are said to give some 20 tons per acre with about 12 per cent. Sugar. This, it may be assumed, represents a fair average during a favourable season. But with Beets, as with so many other plants, sunshine plays so important a part that, when there is an absence of that element, such as has marked the present and preceding summers, the weight of the crop and hence its total amount of Sugar may be materially reduced. It is stated by British agricultural authorities that to grow Sugar-beet successfully, that is, to obtain the maximum of Sugar, the soil should be rather poor than rich, but it has to be remembered that in Continental practice deep cultivation is found to be essential. Still farther it is asserted that Beet culture is profitable only where land is cheap and labour is very cheap, indeed, much cheaper than either in this country. These are factors which, in any commercial undertaking, have to be taken into serious account. To the ordinary farmer the production of a big crop of Mangolds of the globular form offers great attractions, because these produce at least twice the bulk of flesh yielded by the finest of Sugar-beets. Moreover, in lifting such a crop from the ground, the cost is trifling as compared with the lifting of one of long Sugar-beets. These latter have all to be lifted with forks or by special Beet-lifting machinery, and the labour necessitated is expensive, whilst the oval or globe Mangold can be pulled with comparative ease. That fact, again, is an important one in relation to Sugar-beet culture. It is hoped that, should the suggested Wisley trial take place, it will be as complete as possible.

As was pointed out by Mr. Hall, in the course of a discussion on the subject at the

recent meeting of the British Association, the chief ground for urging the general cultivation of the Sugar-beet in this country—assuming that its cultivation can be made a commercial success—is that thereby an additional crop is introduced to agriculture.

But it has to be remembered that unless high Sugar-yielding varieties are grown, that unless the machinery used in Continental cultivation is employed, and unless a similar system of close co-operation between farmers and Sugar factory are adopted, the cultivation of the Sugar-beet, as an agricultural crop, is foredoomed to failure.

To give some idea of the fine art to which Sugar-beet culture has been brought elsewhere, we may describe briefly the method adopted by the co-operating farmers in the north of France. The factory is placed in the region of production. The officials of the factory distribute pedigree seed the Sugar-producing capacity of which is known approximately. A definite system of cultivation is insisted upon. Whilst the crop is standing, officials of the factory sample the roots—boring out pieces of a number of individual Beets. The samples are taken to the factory, where their Sugar-content is determined accurately by the polarimeter method, and the farmer is paid on the basis of weight of crop and Sugar percentage. Special machinery is employed for lifting the roots and for crushing them in the factory. Oxen are used for ploughing and drawing the Beet-lifting machinery, and women do the work of chopping away the tops of the roots. In short, Beet cultivation has in these regions been reduced to a fine agricultural-commercial art.

It may be mentioned that, according to the only accurate experiments which have been made, when sunlight has been below normal, though the roots give a smaller yield per acre, the percentage of sugar is the same as that yielded by roots raised from similar seed, but grown under more sunny conditions. More experiments on this head are wanted, and it is to be hoped that if trials are made at Wisley, meteorological records of sunshine and soil temperatures will accompany the trial.

LINNEAN SOCIETY.—The first general meeting of the society for the forthcoming session will be held here on Thursday, November 3, at 8 p.m., when the following papers will be read:—1, Mr. H. B. BIGELOW, M.Sc.—"Biscayan Plankton," part xiii. "The Siphonophora." 2, Prof. W. A. HERDMAN, F.R.S.—"Plankton Fishing in Hebridean Seas." Mr. J. C. F. FRYER will exhibit lantern slides illustrating coral reefs and the natural history of the Aldabra group of islands.

THE DEVELOPMENT GRANT AND HORTICULTURE.—The Board of Agriculture is taking active steps to secure a considerable annual allocation from the "Development Grant" for the purposes of agricultural research. It is believed that the sum which the Board would like to see devoted to this purpose is £50,000. If, as is bound to be the case, a substantial grant is forthcoming, it is to be hoped that the claims of horticulture will not be overlooked. It is probable that grants will be made only to those societies and institutions which submit definite proposals and make out a good case for assistance. Therefore it behoves all such bodies, if they have not yet formulated their proposals, to do so without delay.

THE LATE MR. JOHN KNIGHTON NOCK.—In his annual report (1909) on the Royal Botanic Gardens, Peradeniya, Ceylon, the acting director, Mr. R. H. LOCK, pays a well-deserved tribute to the memory and services of Mr. JOHN KNIGHTON NOCK, Curator of the Hakgala Gardens, who died in November last at the early age of 29. "His loss, universally regretted in Ceylon, deprives the department of a most able and conscientious officer, and one whom it will be difficult to replace."

ary members one guinea, and for amateurs and professional gardeners 5s. A provisional committee was elected to make the requisite arrangements and draw up a scheme and rules.

CHRYSANTHEMUMS IN THE LONDON PARKS.—The annual displays of Chrysanthemums in Southwark Park are always good, but this year the flowers are finer than ever. Mr. F. WRIGHT, the superintendent, has adopted a different method of arranging the plants, by curving the central

parts of the glass room. The Japanese varieties standing on the floor form the bulk of the plants. There were observed Master James (a glowing chestnut, slightly shaded with rose and the reverse of the florets golden yellow), *Amarantha* (a large flower of rich amaranth colour, with broad, reflexing florets), Mrs. D. W. James (chestnut red), Vivian Morel, Merstham Gem, and Descartes, besides some of the better-known old favourite varieties.

WISLEY TRIALS.—The list of Trials to be held in the R.H.S. Wisley Gardens in 1911 should be amended as follows:—Peas—1 pint of each early in February, instead of " $\frac{1}{2}$ pint" of each early in February. W. WILKS, Secretary.

MR. R. F. FELTON.—Much sympathy will be felt for Mr. FELTON, the well-known florist of Hanover Square, in the loss he has sustained in the death of his wife from tuberculosis. Mrs. FELTON, who died at Bognor on the 20th inst., had suffered for a very long time. She had been taken to Bognor six weeks previously, in the hope that she might gather strength to enable her to withstand the winter.

EXHIBITION OF COLONIAL FRUIT AND VEGETABLES.—The Royal Horticultural Society is again holding a show of Colonial-grown fruit and vegetables, the dates being fixed for December 1, 2 and 3. The show will open at 12.30 on December 1, and at 10 a.m. on the two following days, closing each day at 6 p.m. Fellows of the Society will be admitted free on presenting their tickets. There are ten competitive classes, four being for preserved fruit and vegetables grown and preserved in the Colonies. In the largest class, for an exhibit of 50 boxes of Apples, the 1st prize is the Society's Gold Medal.

SENSATIONAL NEW SWEET PEA.—Under this title the *Weekly Florists' Review* (America) publishes an illustrated account of a new white variety of Sweet Pea raised by Mr. BLAND, secretary of the Horticultural Society at Vancouver. It has been named Jimmie Bland. Etta Dyke was the seed-parent, crossed with an unknown variety. According to our contemporary, the measurements of the flowers on an average spike are as follow:—The lower flower was $2\frac{1}{2}$ inches across; second from the bottom, $2\frac{3}{8}$ inches; second from the top, $2\frac{1}{4}$ inches. The petals were thick and heavy. The stem was 13 inches long to the base of the bottom flower and as big and rigid as an average Carnation stem. Single seeds were planted from pots on March 1. The plants in September were 10 feet high, 3 feet in diameter and vigorous almost past belief. As seeds are being sent for trial by the National Sweet Pea Society, there will be opportunity of testing the new variety in this country.

PUBLICATIONS RECEIVED.—*Present Day Gardening*: A series with coloured plates from photographs, edited by R. Hooper Pearson. Vol. III.: Root and Stem Vegetables, by Alexander Dean. Vol. IV.: Daffodils, by Rev. Joseph Jacob. (London and Edinburgh: Messrs. T. C. and E. C. Jack.) Price 1s. 6d. each volume.—*Department of Agriculture and Technical Instruction for Ireland*. Agriculture Statistics, Ireland. General Abstracts, showing the Acreage under Crops, and the Numbers and Descriptions of Live Stock in each County and Province, 1909-10. (Dublin: Cahill & Co.) Price 1s.—*Quarterly Journal of Forestry*. (October, 1910.) (London: Laughton & Co., Ltd.) Price 2s.—*South Australia: Government Resident's Report on the Northern Territory, 1909*. (From the Agent-General.)—*United States Department of Agriculture. Bureau of Plant Industry*. Circular No. 70: Additional Notes on the Number and Distribution of Native Legumes in Nebraska and Kansas, by Joseph Allen Warren; Bulletin No. 185: Cold Resistance of Alfalfa and Some Factors Influencing It, by Charles J. Brand, and L. R. Waldron.



FIG. 132.—ROCKERY IN THE JAPANESE GARDEN AT THE TULLY NURSERIES.

(See p. 312.)

HORTICULTURAL SOCIETY FOR YORKSHIRE.

—A well-attended meeting convened by the Lord Mayor of Leeds for the purpose of forming a horticultural society for Yorkshire was held on Wednesday, October 26. The Lord Mayor presided. The following resolutions were adopted:—(1) That a horticultural society, to be affiliated, if possible, with the Royal Horticultural Society, be formed with its headquarters in Leeds. (2) That the society be called the Yorkshire Horticultural Society. (3) That the minimum annual subscriptions be: for honor-

path, thus enabling bolder groups to be staged. The plants are rather closely packed, a matter not easy to avoid where thousands are displayed in a limited space. The park is within easy access of London Bridge. There is also a fine display of Chrysanthemums at Battersea Park. The plants are exhibited in a long, hip-roofed glass-house too narrow for the purpose, but apparently the only one available at this season. A serpentine walk winds between the groups on either hand, and single and semi-double-flowered varieties in contrasted tints cover the lower

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

MONTBRETIA ROSEA.—This plant is quite distinct both in habit of growth and in the colour of its flowers, which are of a soft shade of rose. I saw a fine patch of it in flower a short time ago at Underley Hall, Westmoreland, where it was growing in the beautiful flower garden which is situated on a steep bank, near the River Lune. Mr. Miller, the gardener, had placed it in an ideal position, where it could be seen from a path lower down the bank; being of a drooping habit, as compared with others of this family, it showed to much better effect than if it had been planted on a level piece of ground. I have always given this plant a little protection in winter here since 1895, when my specimens were killed, but that was a very severe winter, and I was told it survives at Underley without protection. Like other Montbretias, it requires transplanting every second or third year, or it becomes weak and refuses to flower. I have called it by the name generally used in catalogues, but in Nicholson's *Dictionary of Gardening* it is called *Tritonia rosea*. The so-called "wild garden" at Underley was very gay at the time of my visit, a large collection of the best herbaceous plants occupies a steep bank above the river, where each kind is placed in very large groups; these are intersected by winding paths, but nothing is "wild" now except the surrounding woodland; an abundant supply of rain contributes largely to the success of many of these plants, especially when it is accompanied by a mild temperature. *W. H. Divers, Belvoir Castle Gardens, Grantham.*

ERIOGONUM RACEMOSUM.—In my note on this plant last week, by a slip of the pen I described the flowers as "rosy-pink." I ought to have written "rosy-white." *Herbert Maxwell.*

WHY NEED THERE BE EQUAL PRIZES?—The question is very properly asked by *An Onlooker* (p. 297), why need there be equal prizes? There can be no doubt whatever in the minds of practical men who grow and exhibit first-rate produce as to there always being a dividing line in point of merit in the various exhibits. Competent and painstaking judges can detect the differences if they only take the time and trouble to do so. That a difference in quality of only a half, or even a quarter, of a point may be noticeable in two exhibits is no reason why such exhibits should be placed "equal." Though in such circumstances, I have heard judges say in all sincerity and honesty of purpose "let us place them equal." In judging the numerous high-class exhibits staged at an exhibition such as the Shrewsbury show, the 30 or more experts engaged in awarding the prizes in the horticultural section of the show have to closely scrutinise the majority of the exhibits in pointing them, in order to determine the right and proper position of the individual exhibits; sometimes only half a point divides the 1st and 2nd prize exhibits in important collections. During the many years I have assisted in making the awards at the Shropshire Horticultural Society's Autumn Shows I have no recollection of "equal prizes" being awarded. *H. W. Ward.*

ASTER LUSTRE.—This semi-double-flowered variety of Michaelmas Daisy is a distinct gain to the autumn flower border. The colour of the florets is a deep rose, the flowers being produced in compact heads on stalks about 4 feet high. This variety is suitable for supplying cut blooms as the semi-double flowers last a long time fresh. Like many other fine new Asters, it was raised by Mr. Ed. Beckett, at Aldenham House Gardens. *M.*

TWO NEW PURE WHITE-FLOWERED DELPHINIUMS.—In the issue of *Country Life* for October 1, on p. 475, is figured and described by its owner a most beautiful perennial Larkspur under the name of Lady Isabel, which originated some six years ago in the gardens at Ribstone Hall in Yorkshire. It came from seed saved from a blue-flowered variety named Captain Lambton, but its flowers are pure ivory-white, with a black centre. It must be a most strikingly beautiful and uncommon variety, as nearly all perennial Larkspurs, save *D. nudicaule*, are blue of a darker or lighter shade. In the *Revue Horticole*, for October 16, on p. 465, is also described by M. G. T. Grignan another variety of Delphinium with pure white flowers named *D. Moerheimii*, now being sent out by its raiser, a Dutch nurseryman named Ruys, of Dedemsvaart, in Holland. This is a case of pure dimorphism of a most curious and unexpected nature. A strong seedling plant from blue-flowered parents sent up five flower stems, three of which produced pure white flowers, while those of the other two were pale blue, like the variety Persimmon, the plant was divided, and the blue-flowered portion given the name of *Capri*. *W. E. Gumbleton.*

IVY-LEAVED PELARGONIUMS AS STANDARDS. An easy way to obtain tall stems on which to graft heads of scented, Ivy-leaf or hybrid Pelargoniums, to make standards, is to sow next February in warmth seed of some good strong-growing zonal variety. Such a variety as Paul Crampel would do well. In that way it is possible to raise tall-stemmed seedlings from 3 feet to 4 feet high. When once the stems of these become firm, they may be grafted easily. Even without the assistance of warmth and with but crude conditions I succeeded in working Ivy-leaf varieties on to such stocks 30 years ago, and they soon formed large heads. It may be possible even now to get standards by May, 1912, as has been suggested. Many of the sweet-scented section, whilst pretty, do not give much colour. The new *Clorinda* is a good one, but Ivy-leaf varieties are better. A group of some 20 good standards of these rising out of a ground or carpet of the Snowdrift Zonal Pelargonium would have a striking effect and make a most attractive picture. *A. D.*

INTERNATIONAL EXHIBITION, 1912.—I hope that your proposal for a discussion on the subject alluded to in your leading article (see p. 300) may be carried out at the suggested congress of horticulture. In regard to Phylloxera, I may say that more than once I have found in Switzerland the stringent regulations in France and Germany a nuisance when I have wanted to send through those countries to England parcels of Alpine plants; for even if the roots come from situations 6,000 feet above the sea and miles from any vines one has to go through the formalities. When in a hurry to despatch a box of plants one sometimes has difficulty in finding the burgomaster to sign the form, and on one occasion I found him some distance from the village making hay. This may be a small matter, but the postal authorities in Switzerland refuse to send to England flowers with any roots or soil, e.g., a few Gentians, unless accompanied by the signed declaration. I refer to the ordinary tourists' boxes of flowers, which are now allowed to be sent, when small, by "sample post." I think such arbitrary regulations are a hindrance to botany as well as horticulture. *H. Stuart Thompson.*

LARGE APPLES.—With reference to the announcement on p. 301, respecting the "Apple which sold for 14 guineas," I may say that in these gardens this summer I gathered a fruit of Peasgood's Nonesuch which weighed 28 ounces; the dimensions were 16½ inches in circumference and 6 inches high. Unfortunately, there was a hole in this Apple, picked out by birds, about the size of a penny piece, the hole being approximately ¼ inch deep. Therefore, the original weight of the fruit would have been more than 28 ounces. *John H. Gooding, Trevissome Gardens, Flushing, near Falmouth.*

VARIATION OF POTATOS ON DIFFERENT SOILS.—I was interested in *A. D.*'s note on p. 286. A variety of Potato was given an Award of Merit by the R.H.S. this autumn, and I examined the tubers carefully before I knew the name it was sent under for trial. It was a great surprise to me when I saw the name. I thought the soil at Wisley must be different from any other. Here was a Potato altered in both type and colour from the original stock. It would be only fair to the raisers of new Potatos that they should be asked to send some of their original stock when their varieties are sent for trial by other persons. *A. I.*

SOCIETIES.

ROYAL HORTICULTURAL.

OCTOBER 25.—The meeting on Tuesday last provided a splendid and varied display of garden produce, adding one more to the long sequence of successful exhibitions, only broken by the miserable failure that attended the one held after the August Bank Holiday. A special competitive exhibition of vegetables added additional interest. In most cases, the vegetables were all that could be desired, representing the full-grown produce of a successful season.

Orchids were as attractive as ever, several fine groups being seen, as well as choice individual plants and novelties. The ORCHID COMMITTEE recommended two First-class Certificates and four Awards of Merit.

The displays before the FLORAL COMMITTEE were mainly groups of garden flowers, which have been especially favoured this year with a prolonged season. But the outstanding group in this section was a magnificent exhibit of choice stove and greenhouse plants staged by Messrs. JAS. VEITCH & SONS. The Society's Gold Medal was awarded for this group, and the medal card was specially marked by the Council as being, so far, the most worthy exhibit for receiving the Lawrence Memorial Medal, offered for the premier display at any of the Society's fortnightly exhibitions during the year. The table in the room where the Committee sat was crowded with new and choice plants presented for award, and no fewer than 12 were granted Awards of Merit, the majority being given to varieties of Chrysanthemums.

At the three o'clock meeting in the lecture-room, the Rev. Prof. George Henslow delivered an address on "Life—a Director of Forces in Development and Evolution."

Floral Committee.

Present: W. Marshall, Esq. (in the Chair); and Messrs. H. B. May, Chas. T. Druery, W. J. James, Chas. E. Pearson, Chas. E. Shea, Wm. Cuthbertson, H. J. Jones, Arthur Turner, Chas. Dixon, J. F. McLeod, G. Reuthe, T. W. Turner, Wm. Howe, C. Blick, J. Jennings, W. J. Bean, James Walker, E. H. Jenkins, W. P. Thomson, W. G. Baker, Herbert J. Cutbush, Edward Mawley, W. B. Cranfield, C. R. Fielder, and R. Reginald Nevill.

The collection of choice stove and greenhouse plants referred to above, staged by Messrs. JAS. VEITCH & SONS, Chelsea, occupied the whole width of the hall, having a frontage of 72 feet, with a depth of 8 feet. Conspicuous in the exhibit were plants of *Nepenthes*, arranged on tall stands. These plants were in splendid condition, and included 20 grand specimens, representing 15 sorts. *N. ventricosa* was especially good, and the new *N. nobilis* was afforded a conspicuous position. The curious *N. ampullaria* develops a batch of pitchers at the base of a stem, almost in the soil. The group was brightened by large batches of showy Orchids such as *Oncidium varicosum*, *Odontoglossum crispum*, *O. grande*, *Cattleya labiata*, and *Cypripediums*. The back of the group was comprised of tall *Codiaeums*, *Dracenas*, *Alpinias*, *Dieffenbachias*, and *Aralias*, with tall *Cocos flexuosa* overhanging all. Then in the body of the exhibit were choice examples of *Heliconia illustris*, *Alocasia* in sorts, *Anthuriums*, *Marantas*, *Tillandsias*, and similar fine foliage plants with dwarfier specimens along the front, all arranged in a setting of choice Ferns. The disposition of the plants was excellent, and the imposing display evoked much admiration. (Gold Medal.)

Messrs. VEITCH also filled the table usually allotted to them with Chrysanthemums in pots, and varieties of their winter-blooming Begonias, these being splendid. The variety *Mrs. Heal* is a fine shade of rose, the flowers being larger than *Elatior*, but it is difficult to choose which is the handsomer. The variety *Julius* has semi-double, salmon-pink blossoms. This exhibit received a Silver Flora Medal.

Messrs. H. B. MAY & SONS, Edmonton, showed varieties of large-flowered Veronicas, batches of Begonias of the *Gloire de Lorraine* type, and choice Ferns, including Gold and Silver *Gymnogrammas*, and a magnificent specimen of *Todea superba*, the most elegant of the filmy Ferns. (Silver Banksian Medal.)

Mr. FRANK LILLY, Guernsey, showed three dozen bunches of blooms of Nerines. The more notable varieties were Herm, Purple King, Pink Star, Garibaldi (derived from *N. coruscans* and possessing a charming bright colour), delicatissima, and Bowdenii. (Silver Banksian Medal.)

Mr. L. R. RUSSELL, Richmond Nursery, Richmond, Surrey, showed Veronicas in bloom, a few Clematis in bloom, *Viburnum Tinus argentea variegatus* (with distinct variegated foliage), *Eleagnus glabra*, *Pernettya mucronata* in variety loaded with their fruits, bush Ivies, *Aucuba japonica vera*, the minutely-leaved *Hedera Russelliana*, some capitally-grown *Anæchtochilus* in variety, *Gesnera Golden King* (a very striking plant, bearing large spikes of flowers and bronzy-velvety leaves). (Silver Banksian Medal.)

Lady TATE, Streatham Common (gr. Mr. Howe), showed Ferns of exotic species, occupying a considerable amount of floor space, exhibiting admirable cultivation. (Silver-gilt Flora Medal.)

Messrs. CRISP & SONS, West Bergholt, Colchester, showed a small group of cut Roses.

Mr. C. ENGELMANN, Saffron Walden, showed abundantly perpetual-flowering Carnations, as cut blooms, with, amongst others, Carola, May Day, Harlequin, Fiancee, Scarlet Glow, Regina, Mrs. Thomas Lawson, Victory, Pink Delight, besides a number of seedlings of promise, but which are unnamed at present. (Silver Banksian Medal.)

Messrs. STUART LOW & Co., Bush Hill Park, Enfield, had an exhibit of perpetual-flowering Carnations, consisting of the cream of the older varieties of this section, and some few of the newer ones. We may name T. M. Cook (of a red granite colour), Marchioness of Linlithgow, Beacon, Helen M. Gould, Bay State, Regal Mauve, Royal Purple, May Day, and Black Chief as desirable sorts.

Messrs. Low likewise exhibited a quantity of the pretty decorative *Asparagus myriocladus*, and some plants in good bloom of *Begonia Gloire de Lorraine*. (Bronze Flora Medal.)

Messrs. W. WELLS & Co., Merstham, Surrey, arranged a large bank of Chrysanthemums in one corner. In addition to single and border sorts, there were many large exhibition varieties, the more noteworthy of these being Mrs. R. Luxford (golden chestnut), Mrs. L. Thorne (yellow), Mrs. C. H. Totty (pink), and Miss E. King (sulphur-yellow). (Silver-gilt Banksian Medal.)

DAHLIAS AND HARDY FLOWERS.

Messrs. BAKER, LTD., Wolverhampton, were exhibitors on a large scale of varieties of *Pæony-flowered* Dahlias. The following sorts were extra good of their kind:—Mrs. G. Drummond, Joseph Chamberlain, Baroness Türkheim, Mrs. R. Copeland, Lady Savile, Mrs. W. Kerr, The Tatler, Lady Norman, Germania, Countess of Lonsdale, Hyde Park Gem, Red Indian, and Mrs. J. Nettlefold. (Silver Banksian Medal.)

Messrs. J. CARTER & Co., High Holborn, showed a dwarf Cactus Dahlia named Rayne's Park Gem, 1½ foot in height, with bright scarlet flowers.

Messrs. J. CHEAL & SONS, Crawley, again staged varieties of Dahlias, having a selection of good sorts of the single, *Pæony-flowered* Cactus and Pompon types. (Silver Banksian Medal.)

Messrs. W. CUTBUSH & SON, Highgate, London, again made a bold display with Asters and other border flowers. *Senecio glastifolia* was shown well; the flowers are rosy-mauve, with pretty yellow centres, like some of the border Pyrethrus. *Aster novi-belgii* Gloire de Cronstadt is a choice purple-flowered variety, enhanced by dark orange-coloured stamens. As a separate group, this firm showed Carnations and an assortment of greenhouse plants, including many in berry, and a fine batch of Oranges in Pots. (Silver-gilt Flora Medal.)

Mr. G. REUTHE, Keston, Kent, showed a small, but choice collection of Alpines. The beautiful blue-flowered *Parochetus communis* was observed, also the curious flowered *Tricyrtis hirta*, Nerines in variety and *Crocus caspius*.

Messrs. BARR & SONS, King Street, Covent Garden, showed hardy flowers. *Lilium nepalensis* was well bloomed; *Schizostylis coccinea* attracted notice in its beautiful bright red flower spikes; *Colchicum autumnale* and its double-flowered white variety were pretty; there were also Nerines, border Asters, Kniphofias, and other seasonable subjects. (Bronze Banksian Medal.)

Mr. FRANK BRAZIER, Caterham, showed Asters, Phloxes and Chrysanthemums. A beautiful

Golden Chrysanthemum was seen in the variety Mrs. A. Thompson, while Ethel Blades is a fine red sort. *Aster Amellus Framfieldii* is a good dwarf-growing Michaelmas Daisy. (Silver Banksian Medal.)

AWARDS OF MERIT.

Carnation Regina (perpetual-flowering).—A large, salmon-pink-coloured bloom, with serrated petals, developed on long, stout stalks. The calyx does not split, so that the flower retains a good form. Shown by Mr. C. ENGELMANN; Saffron Walden.

Codivium (Croton) Golden Ring "Lynwood variety."—A form with narrower and rather more drooping leaves than the well-known Golden Ring variety, and also rather more compact in habit. The foliage is twisted spirally and has pleasing colour variation. This and the type are excellent as small plants for table or conservatory decoration, but are not suitable for cultivating as large specimens. Shown by A. E. BAINBRIDGE, Esq., Lynwood, Jesmond Park West, Newcastle-on-Tyne (gr. Mr. Thos. Bell).

Nepenthes nobilis (sanguinea × Curtisii superba).—A large-pitched variety, the biggest pitcher measuring 14 inches in length. The variety favours sanguinea, but is not so dark in colour. The rim is exceedingly handsome, and there are dark-red mottlings on the upper part of the pitcher on a ground of lighter red, which is gradually lost, until, at the bottom, the colour is a shade of green. The plant was a splendid specimen, with 10 finely-developed pitchers. Shown by Messrs. JAS. VEITCH & SONS, LTD.

Nerine elegantissima Mansell Seedling.—A variety with a large spike of flowers as fine as those of *N. Fothergillii* major, but coloured a cerise-rose. Shown by Mr. FRANK LILLEY.

Aster "Novelty."—A pretty Michaelmas Daisy, belonging to the *Ericoides* section of *Aster*, the stem bearing long, shower-like sprays of tiny bluish-tinted flowers. Shown by Mr. F. BRAZIER, Caterham.

Chrysanthemum Mrs. G. O. Kelly.—A large Japanese variety of the exhibition type, with incurving florets, the upper surfaces being old rose and the reverse a silvery-grey, which the incurved tips largely display. The largest bloom measured 9 inches in depth and 8 inches across.

Chrysanthemum J. H. Greville Williams.—A decorative or large-flowered single variety of bright yellow colour.

Chrysanthemum Mrs. Sam Nash.—Also a single variety, the colour being a pretty blush-pink. The flower is of fine form, and may be likened to a glorified Moss Rose.

These three Chrysanthemums were shown by Messrs. W. WELLS & Co., Merstham.

Chrysanthemum Miss Mary Pope.—This also is a blush-pink single variety, the florets drooping pleasingly at the tips, and are set off by the fine yellow disc. Shown by Mr. FRANK BRAZIER.

Chrysanthemum Joan Edwards.—A single variety, with rose-coloured petals and a prominent golden centre. Shown by Mr. P. LADDS, Swanley.

Chrysanthemum Mrs. Tresham Gilby.—Of the large-flowered, decorative, single type, being a yellow sport from the well-known Mrs. Pagram variety. The blooms have three or four rows of extra-large florets, these being of good substance and very clear yellow. Shown by Mr. T. WARD, Bishop's Stortford, Hertfordshire.

Chrysanthemum Hilda Blick.—A white decorative variety of great purity: the florets are tubular almost to their tips. A very refined flower. The variety is suitable for vases and other decorative purposes. Shown by Mr. C. BLICK, Hayes.

Orchid Committee.

Present: Harry J. Veitch, Esq. (in the Chair); and Messrs. Jas. O'Brien (hon. sec.), Stuart Low, F. Sander, R. G. Thwaites, F. Menteith Ogilvie, A. A. McBean, Walter Cobb, J. Charlesworth, J. Cypher, C. H. Curtis, W. H. Hatcher, H. G. Alexander, A. Dye, W. H. White, H. Ballantine, Gurney Wilson, C. J. Lucas, C. Cookson, F. J. Hanbury, and Sir Jeremiah Colman, Bart.

Messrs. SANDER & SONS, St. Albans, were awarded a Silver Flora Medal for a fine group, in which were many interesting plants, the best of them being the handsome new *Cypripedium Britannia* and *C. Princess Mary* (see Awards). The setting of the group was of good Cattleyas, *Lælio-Cattleyas* and blotched *Odontoglossums*,

chiefly hybrids. Among specially fine things noted were the new *Oncidium Sanderæ* of the *O. Papilio* section, but having a very extraordinary beard-like development on each side of the column, the curious little *Lanum Berkeleyi*, the yellow *Dendrobium Bullenianum*, *Govenia Gardneri*, and some as yet unidentified species; *Bulbophyllum Dearei*, the wax-like, white *Houlletia Sanderi*, and a good batch of the favourite *Cypripedium insigne Sanderæ*.

Messrs. CHARLESWORTH & Co., Haywards Heath, were awarded a Silver Flora Medal for a fine group in which spotted *Odontoglossums*, both varieties of *O. crispum* and home-raised seedlings were prominent. A batch of *Vanda cœrulea* was in the centre, around which were several forms of *Cattleya Faba*, *C. Lord Rothschild* var. *alba*, good *C. aurea*, a selection of fine varieties of *Lælia pumila*, good *Oncidium tigrinum*, various *Lælio-Cattleyas*, including some very finely-coloured *L.-C. luminosa*; and *Odontoglossum ardentissimum album*, a white form, with a few yellow spots.

Messrs. STUART LOW & Co., Bush Hill Park, received a Silver Flora Medal for an extensive group, in which the late autumn-flowering *Oncidium varicosum*, *O. oblongatum*, *O. splendidum*, *O. undulatum*, &c., formed the background. *Cattleya Gaskelliana alba*, *C. labiata alba* in several forms, one very white-petalled variety having a pink veining on the lip, as in *C. l. R. I. Measures*; the pretty rose-red *Sophro-Cattleya eximia*, the bright-yellow *Lælio-Cattleya Ophir*, and various *Bulbophyllums*, *Cirrhopetalums*, &c.

Messrs. MANSELL & HATCHER, Rawdon, Yorks., were awarded a Silver Banksian Medal for a group containing very good examples of *Odontoglossum grande*, *O. crispum* and hybrids, varieties of *Cattleya Faba*, *C. Mantinii*, *C. Davisii*, *C. Armstrongie*, *Brasso-Cattleya Digbyana Mendelii*, *Brassavola cordata*, *Epidendrum atropurpureum album*, and other showy Orchids were also included.

Messrs. J. & A. A. McBEAN, Cooksbridge, were awarded a Silver Banksian Medal for a small but select group in which was an example of *Cattleya Dowiana aurea* var. *alba*, the first of its kind to be shown. The sepals and petals were cream-white, the lip ruby-crimson, rather lighter than typical *C. D. aurea*, but with the same fragrance and gold veining. Others noted were *Miltonia vexillaria Leopoldii* of fine colour, and some *Cypripediums* and *Odontoglossums*.

Messrs. ARMSTRONG & BROWN, Tunbridge Wells, were accorded a Silver Banksian Medal for a group containing several of their pretty *Cattleya Armstrongie*, several fine *C. Faba*, *Cypripedium Gaston Bultel*, *C. Germaine Opoix*, several *C. insigne Sanderæ*, &c.

Mr. E. V. Low, Vale Bridge, Haywards Heath, was awarded a Silver Banksian Medal for a select group containing some fine white varieties of *Cattleya labiata*, including *Amesiana*, *Cooksonia*, *Daphne*, and *Vale Bridge* variety, which had a slight blush tint on the lip; *Lælia pumila* Queen Alexandra, white with slate-blue lip; *C. labiata eximia*, a fine dark variety; *Cypripedium Olympic* (*Leeanum Clinkaberryanum × Sellieri Hyeanum*), and *C. Wivelsfieldense* (*Fascinator × Leeanum Clinkaberryanum*) were also shown.

Messrs. JAS. VEITCH & SONS, Chelsea, at intervals in their magnificent group of pitcher plants and decorative *Crotons*, *Dracenas*, *Marantas*, &c., placed groups of very fine forms of *Cattleya labiata*, *Odontoglossum crispum* varieties, *O. grande*, *Oncidium varicosum*, and *O. tigrinum*.

Sir JEREMIAH COLMAN, Bart., V.M.H., Gatton Park (gr. Mr. Collier), staged an interesting group in which were a good example of *Odontioda Bradshawia*, a pretty claret-coloured hybrid between *Odontoglossum Edwardii* and *O. seiptrum*, the pretty *Calogyne sulphurea*, a very large form of *Cirrhopetalum refractum*, several examples of an interesting hybrid *Spathoglottis* raised at Gatton between *S. Fortunei* and *S. plicata*, and named *S. Zebrina*. In form and colour it is nearest to *S. plicata*, the cream-white flowers being more or less tinged and spotted with rose, the apex of the lip in some forms being rose colour and in others yellowish.

Lieut.-Col. Sir GEORGE L. HOLFORD, K.C.V.O. (gr. Mr. H. G. Alexander), sent *Lælio-Cattleya Barbarossa* Westonbirt variety (*L.-C. callistoglossa × C. Trianeæ Imperator*), a grand flower with large, rose-tinted sepals and petals and intense ruby-claret lip, and his new and fine *Odontioda Bradshawia* Westonbirt variety (see Awards).

J. GURNEY FOWLER, Esq., Glebelands, South Woodford (gr. Mr. J. Davis), sent *Cypripedium* *Trilous* J. Gurney Fowler's variety, a very handsome form with several flowers; and *C. Priscilla* (exul. \times *insigne* Harefield Hall), a noble-looking flower with the upper half of the distinctly-blotched dorsal sepal clear white.

R. G. THWAITES, Esq., Chessington, Christchurch Road, Streatham (gr. Mr. Black), showed one of the finest pure-white forms of *Lælia pumila* alba yet exhibited, and his new *Odontioda Seymourii* (*O. Uro-Skinnei* \times *C. vulcaniæ*), which increases in beauty as it gains strength.

FRANCIS WELLESLEY, Esq., Westfield, Woking (gr. Mr. Hopkins), sent *Sophro-Lælia-Cattleya Veitchii* var. *Eros* of a bright-red colour, and *Cypripedium* *Germaine* *Opoix* var. *imperiale*, an excellent variety both in form and colour.

H. S. GOODSON, Esq., Fairlawn, Putney (gr. Mr. G. E. Day), showed a fine form of *Sophro-Lælia-Cattleya Veitchii* var. *Eros*, *Cattleya* *Fabia* alba, and *Lælia-Cattleya* *Felicia* Goodson's variety, a handsome flower with a primrose-yellow tinge on its pink sepals and petals and deep mauve-purple lip.

From the late H. A. TRACY'S Orchid Nursery, Twickenham, was sent as *Vanda* *Floryia*, provisionally named, what appeared to be a small form of *V. Charlesworthii*, white with violet lip.

AWARDS.

FIRST-CLASS CERTIFICATES.

Odontioda Bradshawii *Westonbirt* variety (*O. crispum* *Britannia* \times *C. Noezliana*), from Lieut.-Col. Sir GEORGE L. HOLFORD, K.C.V.O., Westonbirt (gr. Mr. H. G. Alexander).—A superb hybrid with flowers equal in size to those of an ordinary *O. crispum*, all the segments being broad and finely displayed. The sepals are orange-red with a cream-white margin tinged with rose; petals broadly ovate, cream-white, tinged with mauve, and bearing a large reniform blotch in the centre and some red lines at the base. Lip with a chestnut-red blotch in the centre and on the side lobes.

Cypripedium Princess Mary (*niveum* \times *Helen II.*), from Messrs. SANDER & SONS, St. Albans.—The general appearance of this fine *Cypripedium* approaches that of *C. bellatulum* album (derived through *Helen II.*), with a much-enlarged lip and beautiful and uniformly-distributed purple spotting on the dorsal sepal and petals. The ground colour of the flower is pure white, and its form and substance excellent.

AWARDS OF MERIT.

Cypripedium Britannia (parentage unknown), from Messrs. SANDER & SONS.—A large and finely-formed flower of the *C. æson* giganteum section. The broad upper sepal is pale emerald green in the lower half and white above the basal area, having some purplish-spotted lines. Petals and lip large, honey-yellow, veined and tinged with pale purple.

Cypripedium Reginald Young (*Elmireanum* (*Hitchinsia*) \times *insigne* Harefield Hall), from H. J. BROMILOW, Esq., Rann Lea, Rainhill (gr. Mr. Morgan).—A very fine hybrid with some resemblance to *C. Earl of Tankerville* in the large blotches on its Indian-yellow dorsal sepal, which has a white upper half. The petals and lip are yellow tinged with purple.

Calanthe densiflora, from Sir JEREMIAH COLMAN, Bart., V.M.H. (gr. Mr. Collier).—An old but rare species, native of Sylhet and Assam. Scape erect and bearing a dense head of yellow flowers furnished with prominent bracts.

Odontoglossum Circe (*Cervantesii* \times *Pescatorei*), from Messrs. CHARLESWORTH & CO.—A pretty, dwarf hybrid nearest to *O. Cervantesii*. Flowers white, spotted with red on the inner halves of the segments, which are broader than in *O. Cervantesii*.

PARENTAGE OF CYPRIPEDIUM GEORGE V.

Mr. E. V. Low, Vale Bridge, Haywards Heath, forwarded his record of parentage of his *Cypripedium* *King George V.*, omitted when the plant was entered. It is stated to be *C. giganteum* (*Harrisianum* \times *nitens*) \times *C. Charlesworthii*.

Fruit and Vegetable Committee.

Present: W. Poupart, Esq. (in the Chair); and Messrs. Jas. Cheal, J. Jaques, Thos. Coomber, W. Crump, H. Somers Rivers, Alex. Dean, Geo.

Wythes, James Vert, G. Reynolds, John Lyne, Chas. O. Walter, C. Hobday, H. Parr, A. R. Allan, W. Fyfe, W. Pope, James Gibson, John Harrison, Edwin Beckett, W. Bates, Owen Thomas, and J. Davis.

Messrs. SUTTON & SONS, Reading, showed a general collection of vegetables, embracing 160 dishes, representative of almost all kinds in cultivation. They displayed varieties of Onions from a trial of these bulbs at Reading, notable sorts being *Al.*, Improved Reading, Imperial White Globe, a splendid solid Onion, and Ailsa Craig. Brassicas of all types were shown grandly, especially good being Drumhead Cabbage, Dwarf Blood-red Cabbage, a hearting form of Couve Tronchuda, Rosette Colewort, and variegated Kales. Good Beets were seen in Blood Red, Scarlet, and Sutton's Black; choice Parsnips in Tender and True; solid, well-hearted Celery in Superb Pink and Solid White; beautiful specimens of Kohl Rabi in Sutton's Earliest Purple and Earliest White; also Best of All Runner Beans, Stachys tuberifera, New Red Intermediate Carrot, Prizetaker Leek, Satisfaction Lettuce, and varieties of Capsicum, Shallot, Tomato, Maize Heads, Chilies, Cress, Gourd, Turnip, Celeriac, Marrow, Dandelion, Artichoke, Brussels Sprouts, Mushroom and Cucumber. Messrs. SUTTON also showed as a separate exhibit a collection of Tomatos from a trial of these fruits in the open. The best were Abundance, Sutton's Early Market, Winter Beauty, of fine quality; Princess of Wales, and Earliest of All. (Gold Medal.)

Messrs. JAS. VEITCH & SONS, LTD., Chelsea, also contributed a large exhibit of vegetables, showing fine produce from their seeds. We observed Peas Gladstone and Autocrat; Endive, Hollow Crown Parsnips of extra-large size; Autumn Giant Cauliflower with large, white curds; Drumhead Colewort, Maincrop Onion; Sulham Prize, Superb White and Early Rose Celeries; Lyon Leek; Tomato Solidity and many other things such as Beet, Spinach, Brussels Sprouts, Shallots, Salsafy, Mushrooms, Radishes and many more. (Silver-gilt Knightian Medal.)

A collection of Apples in 24 varieties was staged by C. B. BROAD, Esq., Aghern, Conna, Co. Cork. The fruits were well developed and finely coloured, notable varieties being Coronation, Peasgood's Nonesuch, Bramley's Seedling, Baron Wolsley, Hambling's Seedling, Chas. Ross, a superb dish of this showy variety; Baumann's Red Winter Reinette, of deep-red colour; Belle de Boskoop and King's Acre Pippin, a fine Christmas dessert Apple. (Silver Banksian Medal.)

A collection of preserves shown by Mrs. G. BANKS, was awarded a Silver-gilt Banksian Medal.

A Silver Knightian Medal was awarded to Mr. R. W. GREEN, Wisbech, for a collection of 80 sorts of Potatos.

COMPETITIVE CLASSES FOR VEGETABLES.

These numbered 41, three being for collections of distinct kinds, six for collections of Potatos, Onions, Salads and a collection of six uncommon kinds, and the remainder—numbering 32—for single dishes of specified vegetables. Generally, the competition was restricted to three or four exhibitors. The Duke of PORTLAND (gr. Mr. J. Gibson) met with remarkable success, winning 19 1st and five 2nd prizes. He secured the Champion Challenge Cup offered to the winner of the greatest number of 1st prizes, receiving 41 points, the winner in Class 1 being excluded. The Hon. VICARY GIBBS (gr. Mr. Edwin Beckett) also figured prominently in the list of prize winners.

Collection of 12 distinct kinds.—A list of varieties was enumerated in the schedule from which exhibitors could make a selection. The 1st prize included the Sutton Challenge Cup, valued at 20 guineas, which the exhibitor may only hold once in four years. Besides this, a sum of £10 in money was offered to the most successful exhibitor. It was won by one of those magnificent displays we are accustomed to see from the gardens of the Hon. VICARY GIBBS, Aldenham House, Elstree (gr. Mr. Edwin Beckett). The produce all round was of superb quality, and staged by a master hand in exhibiting. The dishes were Dwarf Gem Brussels Sprouts, Tender and True Parsnips, Superb Pink Celery, Ailsa Craig

Onion, Prizetaker Leek, Autumn Mammoth Cauliflower, New Red Intermediate Carrot (extra choice), Potato Superlative, Early Snowball Turnip, Perfection Tomato, Black Beet, and a brace of Matchless Cucumber. 2nd, H. T. TATHAM, Esq., Kendall Hall, Elstree, Herts. (gr. Mr. W. Gaiger), whose best dishes were Ailsa Craig Onion, Student Parsnip, Superb Pink Celery, Cheltenham Green-top Beet, Prizetaker Leek, and Dwarf Gem Brussels Sprouts. There were no other exhibits beyond these two.

Collection of nine kinds.—These were also to be selected from the same list as in the case of the preceding class. There were three fine exhibits, the premier one being shown by the Duke of PORTLAND, Welbeck Abbey, Worksop (gr. Mr. Jas. Gibson). The exhibit was a most meritorious one, the quality of the produce being superb, and staged most effectively. It comprised New Red Intermediate Carrot (a remarkable dish), Ailsa Craig Onion, Superlative Potato, Superb Pink Celery, Prizetaker Leek, Black Beet, Superlative Pea (the finest dish of Peas in the exhibition), Autumn Mammoth Cauliflower, and Princess of Wales Tomato; 2nd, W. H. MYERS, Esq., Swanmore Park, Bishop's Waltham (gr. Mr. G. Ellwood), with excellent vegetables, especially good being Ailsa Craig Onion, Prizetaker Leek, Autumn Giant Cauliflower, and Superb Pink Celery; 3rd, Earl SPENCER, Althorp Park, Northampton (gr. Mr. S. Cole), with choice Parsnips of the Marrowfat variety, very big Webb's Perfection Celery, and Prizewinner Carrot.

Collection of six distinct kinds.—The Marquis of NORTHAMPTON, Castle Ashby, Northampton (gr. Mr. A. R. Searle), was the only exhibitor, but he showed well, and was worthily awarded the 1st prize. Especially good were Giant Celery, Prizewinner Carrot, Autumn Mammoth Cauliflower, Ailsa Craig Onion, and Emperor Tomato.

Collection of 12 varieties of Potatos.—There were two exhibitors in this class, the 1st prize being awarded to the Duke of PORTLAND for as fine a display of tubers as we have observed at an exhibition. The skins were without blemish; moreover, the tubers were well matched and had shallow eyes. A selection of the choicer examples includes Radiator, Supreme, Mr. Breese (a coloured Potato), Sutton's Seedling, Ideal, and Abundance; 2nd, Countess COWPER, Panshanger, Herts. (gr. Mr. R. Staward).

Mrs. DENISON, Little Gaddesden, Berkhamsted (gr. Mr. A. G. Gentle), was the only exhibitor in the class for a collection of six varieties of Potatos, winning the 1st prize with good specimens.

Collection of six varieties of Onions.—The Duke of PORTLAND had the best of three exhibits, all remarkably good. He showed large, sound bulbs of Improved Reading, Crimson Globe (finely coloured), The Sutton Globe, *Al.*, Perfection, and Ailsa Craig; 2nd, W. H. MYERS, Esq., Swanmore Park, Bishop's Waltham (gr. Mr. Ellwood).

Salads.—For a collection of 12 kinds of salads the Hon. VICARY GIBBS won the premier prize easily with extraordinarily good Celery of the Solid White variety, Lettuce Matchless, Chicory Christmas Salad, Cucumber Delicacy, Tomato *Al.*, Batavian Endive, and Mustard and Cress; 2nd, H. T. TATHAM, Esq., Kendall Hall, Elstree (gr. Mr. W. Gaiger).

For a collection of six kinds there were two good displays, the better of the two being staged by the Duke of PORTLAND (gr. Mr. Jas. Gibson), his kinds being Blood Red Beet, Epicure Cucumber, Superb Pink Celery, Golden Ball Lettuce, Curled Endive, and Eclipse Tomato; 2nd, W. H. MYERS, Esq., with good produce, Batavian Endive and Perfection Tomato especially.

Other vegetables.—A list of uncommon vegetables was enumerated in the schedule, from which six kinds were to be selected. The only exhibitor was the Hon. VICARY GIBBS, who had models of uncommon vegetables in Celeriac, Scorzoneria, Long Red Capsicums, Stachys tuberifera, Giant Salsafy, Earliest Purple Kohl Rabi.

There were numerous classes for single dishes of vegetables, and the competition in most cases was satisfactory, whilst the produce in all cases was equal to the best exhibition standard.

Four Northern Counties Fruit Show and Congress.

OCTOBER 20, 21, and 22.

A joint fruit exhibition and congress for the North of England took place on October 20-22, in the Town Hall and Wesleyan Schools at Hexham. It may be said, at once, that the event was attended by a measure of success that should be most gratifying to those who have worked hard to promote an increased interest in the culture of hardy fruits in the four northern counties, Durham, Northumberland, Westmorland, and Cumberland.

The idea originated with the Rev. J. Bernard Hall, R.N., of Dalston (Cumberland), whose enthusiasm for Apple and Pear growing is of such a character as to infect most people with whom he comes into contact. Firmly convinced himself of the desirability of increasing the area of fruit-growing in these counties and of bettering the cultivation already practised, he set himself to obtain the sympathy and support of the local gardening societies, the county councils, the Royal Horticultural Society, and the Boards of Agriculture and Education in a scheme for holding an exhibition of hardy fruits and an educational congress for the discussion of matters relating to fruit cultivation. There could be no better testimony to the zeal and energy he has displayed than that borne by the double events. Although the competitive exhibits were exclusively from the four counties, the exhibition included nearly 700 dishes of Apples and Pears, besides Grapes, boxes of fruit packed for market, and bottled fruits and vegetables. The high quality of many of the Apples caused considerable surprise.

The visitors included a deputation from the Royal Horticultural Society, consisting of Messrs George Bunyard (chairman of the Fruit and Vegetable Committee), James Hudson, and A. H. Pearson; a deputation from the Scottish Horticultural Association, consisting of Messrs. James Whytock (president), and W. H. Massie (vice-president), and a delegate from the Royal Caledonian Horticultural Association—Mr. G. P. Berry. The proceedings were also inspected by representatives of the Boards of Education and Agriculture, and it is generally understood that a Government grant will be forthcoming towards the expenses incurred by the congress. If this is the case, the help thus afforded will be much appreciated by horticulturists in the North, who have not been slow to recognise the great educational value of the Hexham events. A guide to the congress, on sale during the proceedings, contained a large amount of information for cultivators, and the Executive Committee hopes to publish a second volume, which will include all the papers read at the conference and a report of the discussions. The wider this volume can be distributed over the four counties, the greater will be the result of the work that has been so successfully carried out. Many matters of prime importance to northern fruit-growers have been treated of, including such subjects as the best stocks for the trees and the most suitable varieties for cropping in a cold climate. The general opinion appeared to condemn the Paradise stock for the northern counties, on account of its comparative tenderness, and in the matter of varieties it was held that in most cases where failure has attended the attempts to grow good Apples in the North of England, the lack of success can be traced to the preference given to first-class exhibition varieties that succeed in the South to the exclusion of hardier sorts that are alone capable of yielding good returns.

The show was formally opened on Thursday by the joint presidents, Mrs. J. C. Straker and Capt. J. H. Cuthbert, the chair being occupied by Dr. Stewart. Conferences were held each day, and were all well attended. There were exhaustive trials of spray apparatuses, for gold and silver medals. During the exhibition, meetings were held by the British Gardeners' Association and the National Fruit Growers' Federation.

HARDY FRUITS GROWN ENTIRELY IN THE OPEN.

Mrs. N. G. CLAYTON, Chesters Hall, Hums- haugh (gr. Mr. J. Cocker), won a cup offered by Mrs. Bainbridge, Eshott Hall, for the best collection of 18 dishes of hardy fruits. The exhibit contained the following varieties:—*Apples*: Warner's King, Blenheim Pippin, James Grieve, Cellini Pippin, Stirling Castle, King of the Pippins, Lord Suffield, Peasgood's Nonesuch, Ribston Pippin, Ecklinville Seedling, Bismarck, and Worcester Pearmain. *Pears*: Beurré Bosc, Doyenné du Comice, Pitmaston Duchess, and Beurré Diel. All the Pears were from wall trees.

The best collection of nine dishes came from Mr. J. M. ROBSON, Beacon Grange, Hexham. He had of *Apples*: Lord Grosvenor, Lord Suffield, and Worcester Pearmain; *Pears*: Beurré d'Anjou, Belle de Bruxelles, and the very curiously-formed Bishop's Thumb; *Plum*: Magnum Bonum; and Blackberries.



REV. J. BERNARD HALL, R.N.

Hon. Secretary to the Northern Fruit Show and Congress.

Twelve dishes of hardy fruits.—This class was open for horticultural Societies. The HEXHAM GARDENERS' SOCIETY won the 1st prize. The fruits shown in this class were:—*Apples*: Allington Pippin, Lane's Prince Albert, Warner's King, King of the Pippins, and Lord Derby. *Pears*: Belle de Bruxelles, Beurré d'Amanlis, and Marie Louise. *Plums*: Coe's Golden Drop and Magnum Bonum; and *Peach*: Royal George. The CORBRIDGE GARDENERS' SOCIETY gained the 2nd prize with an exhibit of Apples and Pears, and a dish each of Monarch Plum and Blackberries.

Six boxes of hardy fruits, graded and packed for market.—Mr. ALEXANDER, Hexham, had the best exhibit in this class. His boxes contained magnificent fruits of Ecklinville Seedling, Warner's King, Lord Derby, Bramley's Seedling, Worcester Pearmain, and Newton Wonder. They were shown in paper-lined boxes, and each fruit was separately wrapped in paper. 2nd, Mr. J. MILLICAN, Scotby Lane, Carlisle; 3rd, Messrs. H. BRITTEN & SONS, Langworthy.

APPLES.

Twelve dishes, in six or more distinct varieties (restricted to market growers).—In this class were seen some of the finest fruits exhibited at the show. Mr. J. MILLICAN, Scotby Lane, Car-

lisle, obtained the 1st prize for a collection which included the following varieties:—Bramley's Seedling, Royal George (a favourite Apple in these counties), Golden Noble (excellent specimens of this first-rate variety, highly-coloured, clean-skinned, but not very large), King of the Pippins (good in quality, but rather small), Annie Elizabeth (very good), Peasgood's Nonesuch, Bismarck, Cambusneath Pippin (a rather flat-looking fruit, with irregularities about the eye), Lady Sudeley, Warner's King, Charles Ross, and Lord Derby. The 2nd prize in this class was won by Mr. ALEXANDER, Hexham. His specimens of Warner's King were much above the average size, and those of Ecklinville Seedling were very fine specimens. 3rd, Messrs. H. BRITTEN & SONS, Langworthy. There were five exhibits in this class.

Six dishes, distinct varieties, suitable for commercial culture.—Mr. ALEXANDER, Hexham, won the 1st prize and a medal offered by the Worshipful Company of Fruiterers. The varieties were Ecklinville Seedling, Lord Derby, Warner's King, Newton Wonder, Worcester Pearmain, and Bramley's Seedling. 2nd, Mr. J. MILLICAN, Carlisle. His varieties were Early Victoria, Lord Derby, Annie Elizabeth, Lane's Prince Albert, Charles Ross, and Bramley's Seedling.

Twelve fruits of Worcester Pearmain, as packed for market, in a wooden box.—Mr. JOS. HENDERSON, Falloeden Hall, Chester Bank, won the 1st prize; Mr. ALEXANDER, Hexham, was 2nd; whilst Mr. JAS. WAUGH, Stocksfield, was awarded the 3rd prize.

Six dishes of cooking varieties, distinct.—Mr. J. H. STEWART, Holm Hill, Dalston, won the 1st prize with Blenheim Pippin, Annie Elizabeth, Gloria Mundi, Potts's Seedling, Peasgood's Nonesuch, and a seedling which resembled Annie Elizabeth. These fruits were very fine specimens, and gained, in addition to the 1st prize, the Bronze Banksian Medal of the R.H.S., and the Medal of the Royal Caledonian Horticultural Society. A 2nd prize in this class was awarded to Mr. J. FARQUHARSON, Hoyton Gardens, Carlisle; 3rd, Mr. JAMES WAUGH, Stocksfield.

Six dishes of dessert Apples, distinct varieties.—Mr. F. FISCHER, Brackenburgh, had the best collection in this class, showing the varieties Cox's Orange Pippin, Allington Pippin, Blenheim Pippin, Charles Ross, Ribston Pippin and Rival. This exhibit gained the 1st prize and the Bronze Banksian Medal of the R.H.S.; 2nd, Mr. G. DUNN, Whitfield Hall Gardens, R.S.O. The varieties displayed by this exhibitor were Allington Pippin, Pontoise, Kerry Pippin, Worcester Pearmain, Lady Sudeley, and another. 3rd, Mr. J. P. BEWLEY, Causa Grange. There were 10 exhibits in this class.

SINGLE DISH CLASSES.

In the class for one dish of James Grieve, the 1st prize was awarded for large-sized, rather conical shaped fruits shown by Mr. F. FISCHER. In the class for Allington Pippin, the prizes were offered by Messrs. Geo. Bunyard & Co. Mr. J. WAUGH, Stocksfield, won the 1st prize with exceedingly large fruits; there were seven exhibits. In a class for any other kind of dessert Apples, the 1st prize was gained by Tyler's Kernel.

In the classes for single dishes of cooking Apples, the 1st prize for Stirling Castle was gained by Mr. G. SHOTTON, Prudhoe Hall Gardens, Prudhoe.

In the class for Warner's King the 1st prize was given for medium-sized, firm-looking fruits still very green, but some of the specimens shown in this class were quite yellow, and the skins were badly spotted, therefore incapable of keeping good for any considerable time. Bismarck was very well shown, the fruits being good in size and bright in colour; Lane's Prince Albert was equally satisfactory, as were the fruits of Newton Wonder, for which prizes were offered by Messrs. J. R. Pearson & Sons. Bramley's Seedling was represented by large, firm-looking fruits, whilst King of Tompkins' County was worthy commendation in a class for any

other cooking variety than those enumerated in the schedule.

LOCAL APPLES.—Messrs. J. Robson & Sons offered prizes for the best dishes of local varieties originating in the four northern counties. The 1st prize was won by Mr. J. T. STEWART, Holm Hill, Dalston, who showed some fine fruits of an unnamed variety, whilst the local variety Mary Barnes gained the 2nd prize.

ORCHARD HOUSE FRUIT.

(Nurserymen and Market Gardeners excluded.)

Mr. DAVID MACHIE, Eshott Hall, Felton, won the premier prize in a class for three dishes of dessert Apples, showing Ribston Pippin, Allington Pippin and Cox's Orange Pippin. 2nd, Mr. JAMES WAUGH, who showed Cox's Orange Pippin, Ribston Pippin and Worcester Pearmain. 3rd, Mr. G. SHOTTON.

Mr. JAMES WAUGH was awarded the 1st prize in a similar class for cooking Apples with an exhibit composed of the varieties Cox's Pomona, Lord Derby, and Peasgood's Nonesuch.

For three dishes of Pears.—Mr. JAMES WAUGH showed Doyenné du Comice, Magnate and Princess; 2nd, Mr. G. SHOTTON.

Six dishes of dessert fruit.—Mrs. N. G. CLAYTON, The Chesters, Humshaugh (gr. Mr. J. Cocker), won the 1st prize with a collection which included Pitmaston Duchess and Beurré Diel Pears, Lady Sudeley Apple, Golden Drop Plum, Sutton's Scarlet Melon, and Black Ham-burgh Grapes. 2nd, Mr. G. SHOTTON, Prudhoe Hall Gardens, Prudhoe.

Mr. G. SHOTTON had the best four bunches of Grapes, showing excellent bunches of Black Alicante and two indifferent bunches of Muscat of Alexandria.

PEARS.

Hon. C. A. PARSONS, Holeyn Hall, Wylam-on-Tyne (gr. Mr. Matthew Dixon), had the best collection of six dishes in the varieties Beurré Superfin, Marie Louise, Pitmaston Duchess, Doyenné du Comice, and Durondeau.

Mr. W. H. LAMBERT won the 1st prize for three dishes, showing Pitmaston Duchess, Durondeau, and Hacon's Incomparable. Mr. DIXON was 2nd with Durondeau, Marie Louise and Pitmaston Duchess.

In a class for Pitmaston Duchess, some splendid fruits were shown by Mr. J. WAUGH; and in the class for any other variety, both the 1st and 2nd prizes were awarded to the variety Durondeau.

There were also classes for bottled fruits, in which Mr. J. STEVENSON, Newbiggin House, Blanchard, showed the best fruits; and others for fresh fruits of Plums, Crab Apples, Loganberries, Red Currants, and Blackberries.

HONORARY EXHIBITS.

Messrs. JOS. ROBSON & SON, The Nurseries, Hexham, contributed a collection of coniferous and other evergreen plants in pots. These were bushy little specimens, but the names were not indicated. An exhibit of good Apples was also shown in many varieties, and red cards were affixed to certain sorts to indicate that they succeed best in the Hexham district. Those so marked included the varieties Lord Grosvenor, Lord Suffield, Worcester Pearmain, Northern Spy, Domino, Warner's King, Potts's Seedling, Stirling Castle, Ecklinville Seedling, Little's Seedling, Gascoyne's Scarlet Seedling, and Duchess of Oldenburgh.

From the CUMBERLAND AND WESTMORLAND COUNTY COUNCILS fruit plots, Mr. W. B. Little exhibited excellent Apples (see fig. 135) of such varieties as Worcester Pearmain, King of the Pippins, Duchess of Gloucester, and a local variety without name; also bottled fruits and Rhubarb, Pear shoots and fruits affected with canker, mounted specimens of various insect pests, and artificial and mineral manures. Mr. Little also exhibited a large number of Apples from the Cumberland and Westmorland fruit plots at Newton Rigg and Lyth. The labels were marked with +, ++, or +++, as indications to visitors which varieties are remarkable for vigorous growth and free cropping qualities, and separating them for light and heavy soils.

Mr. JOHN MILLICAN, market gardener, Scotby Lane, Scotby, staged upwards of 70 dishes of Apples of varieties specially recommended for Northern England. We cannot give a list of the varieties, but a few may be men-

tioned. White Paradise appears to be known in the Hexham district as "Ten Shilling." Of the uncommoner sorts, we may enumerate Mary Barnes (a green-looking kitchen Apple), Swan Egg, North Britain Giant, Scotch Bridgett, Over Sea Peggie, Harvest Lemon, and Yorkshire Beauty.

Messrs. GEORGE BUNYARD & Co., Royal Nurseries, Maidstone, Kent, staged a large collection of Apples and Pears, including a splendid lot of fruits from the orchard house. The numerous varieties of Apples from the open orchard were divided into two sections, those specially recommended for culture in North Britain being marked "N.B." Amongst these we noticed Golden Noble, Seaton House, Worcester Pearmain, Galloway Pippin, Bielo Borodawka, Lady Sudeley, Lord Grosvenor, Lane's Prince Albert, Stirling Castle, Bramley's Seedling, Hitchin Pippin, Ross' Nonpareil, Potts's Seedling, Duchess of Gloucester, Ben's Red, Claygate Pearmain, Early Victoria, Golden Noble, Newton Wonder, Worcester Pearmain, and Lord Derby.

Messrs. THOMAS RIVERS & SON, Sawbridge-worth, Hertfordshire, brought an exhibit of about 50 dishes of Apples and Pears. Many of the fruits exhibited were the produce of indoor cultivation, but in these instances this fact was pointed out on the labels, so that visitors were in no wise misled in the matter. Amongst the varieties grown indoors were very fine examples of that excellent

Golden Noble; another, Stanwix King, which had some resemblance to Mère de Ménage, Blackwell Park (a deep green fruit), Carlisle Castle, Over Sea Peggie (after the manner of Housewife), Lowther Castle, Old Nonpareil, and Royal George.

Mr. WILLIAM LAWRENSON, Newcastle-on-Tyne, showed a group of winter-flowering Carnations, Bouvardias, Primula obconica, Ferns, Begonia Gloire de Lorraine, and selected varieties of Apples and Pears.

Messrs. GEO. FAIRBAIRN & SONS, Botcherley, showed Carnations and florists' devices.

The KING'S ACRE NURSERY COMPANY, King's Acre, Hereford, contributed a large number of Apples and Pears in distinct varieties (see fig. 134). Most of the standard sorts were represented by excellent specimens, both in size and colour. In addition to a very fine exhibit of gathered fruits, this nursery company contributed a few fruit trees in pots, with Apples and Pears still hanging upon them.

Messrs. E. F. FAIRBAIRN & SONS, Carlisle, showed border Chrysanthemums and Dahlias.

Messrs. FELL & Co., Hexham, exhibited a group of ornamental plants, including stove and greenhouse species, such as Lilium speciosum, Carnations, Spiræas, and Ericas in flower; also a few carefully-selected Apples and Pears of good quality. These included, of Apples, Beauty of Moray, Scotch Bridgett, Tower of Glamis, Mary Barnes, and, naturally, Keswick Codlin.

Mr. JNO. COULSON, St. Mary's Chase, Hexham,



[Photograph by W. E. Little.]

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FIG. 134.—EXHIBIT OF APPLES AND PEARS FROM THE KING'S ACRE NURSERIES, HEREFORD.

Apple Gascoyne's Scarlet Seedling, of large size, and showing brilliant colouring. Cox's Orange Pippin was scarcely recognisable owing to its large size, being equal in this respect to fruits of Blenheim Pippin. In colour, they were rich yellow, with streaking of deep red, and, as exhibition fruits, they were very prominent, but scarcely the most suitable for the dessert table. The varieties Allington Pippin and Charles Ross sufficiently resembled Cox's Orange Pippin to indicate something of their parentage, whilst Charles Ross was equal in size, at the least, but possessing a form, especially some of the fruits, exactly similar to Peasgood's Nonesuch, one of its parents. James Grieve, a good northern fruit, was represented by fine specimens; and Peasgood's Nonesuch were the largest and most conspicuous fruits in the entire exhibit. The most brilliantly-coloured varieties were King of Tompkin's County and Cox's Pomona. Lady Henniker, The Queen, and Washington were more delicately coloured, but not the less inviting. To mention a few Pears from the orchard house, there were Conference, St. Luke (Rivers), Red October (Rivers), Pitmaston Duchess, Beurré Fouqueray, and Beurré d'Anjou. Whilst the out-door fruits were commendable specimens, they naturally suffered from their association with those obtained from indoor culture.

Messrs. CLARK, BROS. & Co., Carlisle, showed a collection of local Apples, in which we noticed one named John Peel, which resembled

exhibited tubers of a new, coloured, oval-shape Potato, known as Lord Allendale.

Messrs. MITCHIE & Co., Alnwick, showed the following varieties in a very commendable exhibit of Apples:—Beauty of Moray, Cockpit, Kerry Pippin, Galloway Pippin, Cambusneathan Pippin, Royal Snow, Ringer, Winter Ruby, Thorle Pippin, Seaton House, and Northern Dumpling. These varieties were stated to be capable of bearing satisfactory crops in the district.

Messrs. PORTEOUS & THOMSON, 27, Market Place, Hexham, showed some Apples and Pears; Messrs. SAMUEL FINNEY & Co., 17, Colliery Wood Street, Newcastle-on-Tyne, flowering bulbs, fibre, and utensils for the cultivation of bulbs; and the CHADWICK MEMORIAL SCHOOLS a collection of fruits, vegetables, and flowers; Mr. WALTER A. VOSS, Rayleigh, Essex, a collection of Apples and Pears; and Mr. W. ALEXANDER, Hexham, a collection of Apples.

INSECTICIDES, SPRAYING APPARATUS, &c.

There were excellent exhibits of insecticides, fungicides, spraying apparatuses, and other implements arranged in the Wesleyan Schoolrooms. Amongst the firms thus represented were the following:—The COLORADO ORCHARD HEATER Co., Hounslow, London, W.; M. HERROD, Wisbech; MORRIS, LITTLE & SON, LTD., Doncaster; WALTER VOSS & Co., LTD., Millwall, London, E.; R. BURLAND & SON, Wigan; WILLIAM COOPER & NEPHEWS, Berkhamsted; BELL &

RIDDLE, Hexham; ALPHA EXTINGUISHER, LTD., Ross, Herefordshire, and the FOUR OAKS Co., Sutton Coldfield.

Awards by the Royal Horticultural Society.

SILVER-GILT KNIGHTIAN MEDALS to The King's Acre Nursery Co., Hereford; Messrs. Bunyard & Co., Maidstone.

SILVER HOGG MEDAL to Messrs. T. Rivers & Sons, Sawbridgeworth.

SILVER-GILT BANKSIAN MEDALS to Messrs. J. Robson & Co., Hexham; Messrs. G. Fairbairn & Sons, Carlisle; Mr. J. Millican, Scotby, Carlisle.

SILVER KNIGHTIAN MEDALS to Messrs. W. Fell & Co., Hexham; Messrs. Miche & Co., Alnwick; The Cumberland County Council; Mr. Walter A. Voss, Rayleigh, Essex.

SILVER BANKSIAN MEDALS to Messrs. Lawrenson & Co., Newcastle; Mrs. N. G. Clayton, Chester Hall (gr. Mr. J. Cocker); Mr. W. Alexander, Hexham; Messrs. Clark Bros. & Co., Carlisle; Mr. Dixon, Holey Hall Gardens, Wylam; The Chadwick Memorial Schools.

Cecil H. Hooper, M.R.A.C., F.S.I. (Wye College, Kent); Mr. David Horne (Cowan's, Sheldon & Co.), Carlisle; Mr. W. B. Little, Hort. Lecturer, Armstrong College, Newcastle; Mr. G. L. Murray, M.I. Mun. E., Cert. R.S.I., Town Surveyor, Hexham; Mr. E. J. Chittenden, F.L.S. (R.H.S. Laboratory, Wisley, Surrey).

KNAPSACK SPRAYERS.

Having inspected the various models of knapsack sprayers, submitted by the FOUR OAKS Co., Messrs. BURLAND & SON, and the ALPHA Co., on the lines of power, nozzle tests, lime washing, durability, access to parts, and general construction, the judges gave their awards as follows:—THE ALPHA Co. (Gold Medal), FOUR OAKS Co. (Silver Medal), BURLAND & SON (Bronze Medal).

The judges consider that the knapsack sprayers submitted by the ALPHA Co. (which are of the pneumatic type) are a considerable advance on previous designs. Their construction is simple, reliable, and effective, there being no working parts to get out of order.

The Four Oaks knapsack was found to be a considerable improvement on the older forms of knapsack sprayers, inasmuch as the fittings are

display as a whole (Gold Medal); BURLAND & SONS, horticultural sundries, trade display as a whole (Silver-gilt Medal); Voss & Co., horticultural sundries, trade display as a whole (Silver-gilt Medal, with special reference to their "Dry Sprayer"); ALPHA Co., horticultural sundries, trade display as a whole (Silver-gilt Medal); COLORADO Co., horticultural sundries, trade display as a whole (Silver Medal); M. HERROD, horticultural sundries, trade display as a whole (Silver Medal); CROZIER, STEPHENS & Co., horticultural sundries, trade display as a whole (Award of Merit); D. WILSON, horticultural sundries, trade display as a whole, frames for intensive culture (Award of Merit); COOPER & NEPHEWS, Award of Merit as an educational exhibit; MORRIS LITTLE & SON (Award of Merit).

THE CONFERENCE.

THE proceedings were opened on Thursday, at 3.15 p.m., Dr. D. Stewart in the chair. The room was crowded, and it was not possible for all to gain admission.

The first paper, which we print below, was by Mr. Geo. P. Berry, Horticultural Instructor to the Edinburgh and East of Scotland College of Agriculture, on "Fruit Storage and the Bottling of Fruit."

THE STORING AND BOTTLING OF FRUIT.

In the practice of horticulture, as in the professions and crafts generally, we have been guided, to a great extent, by conclusions arrived at by eminent men, and have taken little trouble either to verify or to question them. It is not surprising, therefore, that, from time to time, the rules and systems which have hitherto bound us should be shown to be fallacious. At the same time, I trust that any statements in this paper which may appear to be antagonistic to generally-accepted ideas may be well considered.

PICKING THE FRUIT.—In addition to the importance of avoiding the breaking of the cuticle, or outer skin, there is another matter which requires attention. In Apple and Pear growing, thinning should always be carried out on the lines of one fruit to one spur, but too little care is often bestowed on the buds, which should remain on the spur after the removal of the fruit. On a spur bearing a good Apple, no bud, as a rule, develops sufficiently strongly to produce fruit the following season.

During the development of the fruit, two main buds form, one on either side of the fruit stalk, and immediately below its junction with the spur. On rare occasions only do these buds produce blossom the following season; but they do so in the second season after their formation. In picking the fruit, great care must, therefore, be taken not to damage these buds, and it must be done in orthodox fashion by gently raising the fruit and severing the connection at the end of the fruit-stalk by means of the fore-finger and thumb. The buds are very easily damaged, and, in hundreds of cases, they are removed along with the fruit, thus rendering the spur useless for several years.

BRUISING OF THE FRUIT.—Too little importance is often attached to the operation of gathering the fruit. Such methods as shaking the trees, and picking the fruit off the ground, as is sometimes practised in orchards, tend to do away altogether with the possibility of keeping the fruit. Apples, Pears, Plums, &c., should be carefully picked in shallow, lined baskets, and should be removed and placed on the fruit-store shelves by hand. Apples should not be placed in large hampers and wheeled to the fruit-store in barrows, as, by so doing, bruising is certain to take place. Whenever the skin of the fruit receives a bruise of any kind, air is admitted, and this at once begins to act on the acid of the fruit, causing oxidation or discoloration, and hastening decay.

STRUCTURES FOR STORING THE FRUIT.—These are often very unsuitable. I have in my mind a most elaborate fruit-room in a fruit-growing garden in Banffshire, where almost all the conditions necessary for successful storage are absent. The best fruit-rooms are those below the ground level, and into the construction of which practically no woodwork enters. The shelves should be formed of Welsh slate slabs, fixed into the surrounding walls, and ventilation should be provided for by means of openings at the base of the



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FIG. 135.—EXHIBIT FROM THE CUMBERLAND AND WESTMORLAND COUNTY COUNCILS.

BRONZE BANKSIAN MEDALS to Mr. J. H. Stewart, Dalston; Mr. Thos. Waugh, Stocksfield; Mr. F. Foster, Brackenhurst; Messrs. Porteous & Thomson, Hexham.

SPRAYING DEMONSTRATION.

The following is an official account of the spraying trials.

Judging took place on the following basis:—

- | | |
|---------|--|
| Max. | |
| Points. | |
| 25 | For power tests. |
| 25 | For nozzle tests. |
| 20 | For lime washing, e.g., clear working, thick coat, strainer, &c. |
| 10 | For durability and resistance to chemical actions. |
| 10 | For cost. |
| 5 | For ease of access to parts, e.g., in case of clogging. |
| 5 | For general portability and adaptability. |

external to the reservoir, and therefore not in contact with the liquid. A great improvement was also noted in the fittings of the extension rods, the inlet having been removed from the bottom to the side. The harness and socket for holding the extension rods were also favourably commented on.

The Burland knapsack was similar in some respects. The working parts are outside and easily accessible, a special feature being its adaptability for working with either hand.

HAND-POWER SPRAYING MACHINES.

The competition between hand-power spraying machines was keen, and after exhaustive tests, and taking into consideration the mechanism, portability and cost, the judges came to the following conclusions, viz., Messrs. BURLAND and FOUR OAKS Co. (Silver Medals), Messrs. W. Voss (Bronze Medal).

SPRAYING SYRINGES.

The Four Oaks undentable spraying syringe, with adjustable nozzle, was awarded a Gold Medal.

The following medals were also granted:—FOUR OAKS Co. for horticultural sundries, trade

The judges were:—Mr. G. B. Berry, Hort. Lecturer, Edinburgh Agricultural College; Mr.

walls, and in the roof, in order to prevent stagnation of the atmosphere.

TEMPERATURE.—For Apples, the temperature should be kept as near to 38° F. as possible. In fact, in some stores it falls to 32° without doing any injury. A most important thing, however, is the presence of a considerable amount of moisture in the atmosphere, provided there is a fair circulation of air. Many fruit-rooms have such a dry atmosphere that it is impossible to keep Apples well in them. A dry-and-wet-bulb hygrometer, which will at once indicate the state of the atmosphere as regards moisture, should always be used.

DESSERT PEARS.—These require a considerably drier atmosphere and higher temperature than Apples, from 40° to 45° F. being about the best temperature. The fruit should, as far as possible, be placed one layer deep on the shelves, and it should be examined periodically, and decayed specimens removed. Late-keeping varieties of stewing Pears will require a lower temperature, with moisture in the atmosphere, similar to that required for Apples, otherwise undue evaporation takes place, with corresponding shrinkage of the fruit.

FLAVOUR.—Fruits of all kinds, but more especially Apples, very readily take the flavour of substances with which they may be brought into contact, or which may be in suspension in the atmosphere of the fruit-room. A fruit-room, therefore, should contain no substances likely to contaminate the atmosphere, and it should never be used as a seed-store. I have tasted the flavour in Apples of ordinary Archangel mats (in which seeds had been received) which had been placed for some time on the floor of the fruit-room, although no direct contact had ever taken place. Straw is another objectionable substance in a fruit-store, and even woodwork of all kinds should be dispensed with, as already mentioned. The best substance on which to lay Apples and Pears is burnt clay. A layer of this, one-eighth of an inch deep, should be placed on the shelves of the fruit-store, and, by this means, not only will the flavour of the fruit be retained, but it will be considerably improved, by preventing contact with the wooden shelves, more especially in the case of late-keeping varieties.

Light in a fruit-room is not objectionable, provided it is not direct sunlight. No windows which are directly exposed to the sun should be left unshuttered, otherwise the uniformity of temperature will be disturbed.

THE SWEATING PERIOD.—Apple fruits exude an oily substance, which is more abundant in some varieties than in others. This sweating commences from 14 to 21 days after storing, and the oily substance exuded from the fruit is, apparently, one of Nature's methods of rendering the skin air and water-proof. The sweating period should never be hurried by drying the atmosphere of the store either by fire heat or by too much ventilation. If a gentle circulation of air is taking place, just sufficient to prevent saturation, that is all that is necessary. The "sweat" should be allowed to dry slowly on the skin of the fruit, and it will repay one, so far as the keeping qualities of the fruit are concerned, to give this matter careful attention.

In the north, late varieties of Apples are sometimes gathered too early. This, of course, causes shrivelling even in the best store and under the best conditions. It often pays to allow a late variety of Apple or stewing Pear to remain on the tree to well on in November, or even later. These varieties seldom suffer from frost, the sugary material in the fruit being less easily affected in this way than it is in the earlier, and, therefore, more mature varieties.

STORING IN JARS.—After the sweating period has been passed, the fruit may be selected and placed in large earthenware jars. This is done in the following way:—The fruits are placed in layers in the jars, and the top of the jar covered by a piece of ordinary roofing slate. The jars should then be placed in a cool cellar or store-room, and if a variety has been selected which has got a long keeping season, such as Bramley's Seedling, Newton Wonder, or even Lane's Prince Albert, fruits stored under such conditions will almost keep until the fruit season comes round again. It is always advisable, even in a large establishment, to treat a few of the best of the late-keeping varieties of Apples, and also of the late-keeping varieties of Pears, whether dessert or stewing, in this way.

BOTTLING OF THE FRUIT.—We are all more or less familiar with some of the many devices resorted to by experienced cooks in large establishments for the storing and preserving of fruit and vegetables. In many cases a fair measure of success attends such efforts, but the one great objection to the majority of the methods employed is that the fruit has to be heated to the boiling-point before being considered safe to place in the store-room. This causes the fruit to become discoloured, and ripe fruit is almost certain to burst. Formerly, few private families, and still fewer cottagers, ever attempted the bottling of fruit for their own use, but in the course of the last few years a great change has come about in this matter. Bottles and appliances, with full instructions, can now be had so cheaply that any person possessing even a few fruit bushes in a small cottage garden is in a position to lay by a portion of his fruit, either ripe or unripe, for winter use.

The operation is of such a simple nature that success should attend the first effort. The one essential to success is suitable bottles and appliances for sealing them. The most useful and economical bottle that the writer has yet seen is that sent out by Carrington, Shaw & Co., Glasgow. Almost any size of bottle can be obtained, holding from a pound or two up to a gallon. The most suitable size for all purposes is, perhaps, the quart bottle, costing, along with glass stoppers, washers, &c., 4s. 6d. per dozen. The bottles are of ordinary glass, have a wide neck, and a special screw arrangement, by means of which the stopper is fixed down. Each bottle is provided with a rubber washer and a glass stopper, which fits firmly down on the rubber washer when in position.

THE OPERATION OF BOTTLING.—The fruit should be carefully selected. It should not be bruised, nor should it be damaged by birds or insects. Taking Gooseberries as an example, either green or ripe, proceed as follows:—First remove, by means of small scissors, the fruit-stalk and the withered remains of the calyx at the apex of the fruit. Make sure that the bottles have been scalded, and are scrupulously clean and sufficiently cool. Begin by placing the Gooseberries in the bottles, using fruits of various sizes, and giving the bottle an occasional shake in order to pack them as closely as possible. When the bottle has been filled up to the neck with fruit, pour into it sufficient pure (preferably spring) water to cover the fruit and stand a quarter of an inch up the neck of the bottle. Adjust the rubber washer. Place the stopper on the bottle, and adjust the screw on lid so that the stopper presses equally on the rubber all round. When the fruit has been thus disposed of, the bottles are ready for heating. This may be done in any large cooking utensil which is deep enough to allow of the bottles standing in water up to the neck while being heated. Place the pot containing the bottles over a fire, gas stove, or spirit lamp, and place an ordinary dairy thermometer in the water surrounding the bottles. The thermometer should be examined from time to time as the temperature of the water rises, and when 145° F. is reached the heat should be so regulated as to keep the temperature of the water as near to that point as possible for one and a half hours. The vessel should then be placed in a cool scullery or cellar, and when the water has become quite cold (in the course of 9 or 10 hours) the bottles should be taken out. The stopper will be found to be sealed hard down to the washer. Give the tin lids a rub with an oily or greasy cloth to prevent corrosion, and store the bottles in a cool, dark cellar or cupboard. The same process must be gone through in the bottling of all kinds of fruit, whether ripe or unripe. In bottling ripe Plums, care must be taken in removing the fruit-stalk not to rupture the fruit at the base, or at any rate to damage it as little as possible, and in order to avoid this the stalk should be twisted round before being pulled out.

In the case of ripe fruit, a sugar solution consisting of $\frac{1}{2}$ lb. pure cane sugar to 1 quart of water may be used. Heat should be applied till the sugar is dissolved, and, when cold, pour into the bottles. The fruit may then be used directly from the bottles, along with the syrup.

Apples and Pears, after being cored for boiling, should be kept under water till ready for placing in the bottles, and immediately this is done they should again be covered with water, in order to prevent discoloration.

SCIENTIFIC PRINCIPLES UNDERLYING THE OPERATION.—According to a well-known physical law, if the temperature of a given volume of a gas be raised, while the volume is kept constant, the pressure of the gas increases in direct proportion to the rise in temperature. Now, we have in the neck of the bottle a volume of air confined in a given space, and as the temperature rises the pressure increases to such an extent as to raise the lid and allow the expanding air to escape, without allowing the stopper to be blown off. By keeping the water in the bottle at 145° F. for over one hour, a considerable portion of the air contained in the water is also liberated, and when the temperature of the water begins to fall below 145°, the screw-on tin cover presses the stopper down on the washer on all sides, so that no air is admitted from the outside. When the bottles and their contents are cold, the pressure of the air inside will be considerably lower than that outside, and the greater pressure of the air outside will therefore be sufficient to keep the lids down on the washers, and thus the bottles are perfectly air-tight. The washers should never be used more than once. The bottles are opened by unscrewing the outer tin lid and raising the glass stopper.

STORAGE OF FRUIT.

Mr. W. B. Little, Horticultural Instructor to Armstrong College and the Cumberland and Westmorland County Councils, next read a paper upon the "Storage of Fruit." He said that everyone recognized that it was desirable to have means of keeping late-ripening Apples in good condition for as long as possible. But in the first place it was necessary to adopt the best methods of cultivation possible in order to ensure perfect development in the fruits, for it was only the finest fruits that were worth the trouble and expense of keeping over a long period. All but the soundest fruits should be rejected, and, for this reason, the greatest care should be exercised in the gathering and handling. He next explained how amateurs might ascertain when certain kinds of fruits are ready for gathering.

Plums readily part from the twigs when ripe.

Apricots are ripe when the side next the sun appears soft and yields to gentle pressure by the finger; they as a rule adhere firmly to the twigs and would over-ripen on them if allowed to remain.

Peaches and Nectarines will separate if ready by moving the fruits upwards and allowing them to descend with a slight jerk; they should be received into a funnel lined with velvet.

Pears part readily from the tree on being raised to a horizontal position level with their stems on foot-stalks.

In regard to Apples, if it is noticed that some are dropping naturally from the trees, the whole of the crop will be ready for gathering. If doubt still exists, cut open an apple of the average ripeness, and if the seeds are black or brown in appearance it is a sure indication of the readiness of the crop. All fruits should be gathered in the middle of a dry day.

It is necessary to have a suitable fruit room, and advice should always be sought from some one having a knowledge of the necessary conditions. It is desirable to have the building partly underground to ensure evenness of temperature and moisture.

Burnt clay tiles specially made are cheap, and if laid on rafters would make ideal shelves for laying the fruit on.

If an amateur wishes to convert an ordinary shed into a fruit-room it should be made frost-proof by thatching or by matchboarding the inside and filling between this and the permanent walls, with sawdust or straw. The roof should be treated in a similar manner. The interior may be fitted with sliding trays in tiers.

SIMPLE STORAGE.—Many kinds of Apples will keep successfully if stored away in bulk. A good many people in the north pit Apples in much the same fashion as Potatoes. It is necessary first of all to cover the fruit with brown paper and then with Wheat straw on thoroughly dried bracken. The whole is then covered with a thick layer of soil. An aperture is left at the top for some weeks to allow for sweating. The drawback, however, is the difficulty experienced in getting to the fruit.

The erection of a simple hut on something like the following lines was suggested for small amateurs. Make an excavation about 18 inches



A JAPANESE GARDEN IN THE TULLY NURSERIES, CO. KILDARE.

deep, then build brick walls, the back wall to be 4 or 5 feet in height and the front wall 3 or 4 feet. All around the walls, with the exception of the entrance end, turves or sods may be stacked in much the same way as in the case of the old sod-pits or frames. The roof should be formed of galvanized zinc, and a thick layer of turves and then another layer of zinc to allow the water to run off.

The door should be made box-like, and packed with sawdust. Inside, the pathway could be excavated to the depth of 18 inches or 1 foot, so as to allow a person to stand erect. There are certain points to remember in the management of a fruit-room. For three or four weeks allow a free circulation of air, afterwards keep the air close. Maintain an even temperature during winter from 38° to 42°. Never allow the atmosphere to become dry.

Another means of storage is to pack Apples in barrels and store them where frost will not injure them. If a barrel of Apples is sunk half its depth into the ground and covered over with soil frost is excluded.

FRUIT-TREE STOCKS.

Mr. H. Somers Rivers read the following paper on "Fruit-tree Stocks."

To speak on the subject of fruit-tree stocks necessitates frequent reference to the history of horticulture, and that in turn involves research in many ancient garden books written in quaint language expressive of quaint ideas.

Many worthy writers seem to have taken their predecessors' statements for gospel and copied freely from them with or without acknowledgment. In the early 18th century there was a fashion, which obtained also in medical and other works, of going back to the classics for information. All was accepted as fact, without hesitation. However wild the statements may have been, they were under the ægis of antiquity, and, therefore, credible.

Myths of Roman writers were cited in good faith, and all sorts of impossible graft combinations gravely set forth.

To give an idea of these, Virgil, for instance, relates that Nuts were grafted on the Arbutus; Apples on Nut and Maple bushes, on Planes and Pears; Pears on Ash, &c.

I need not multiply instances, many of the authors were poets and took poetic license.

Most of these fairy tales are to be found in *The Vineyard*. Being the Observations made by a Gentleman in his Travels (2nd edition, 1732), which may be consulted by anyone wishing an excellent résumé of them. The gentleman need not have travelled very far from his own fireside for the information which he contrived to obtain.

It seems that fruit culture prior to the 16th century was somewhat primitive in England. In the *Fruiterers' Secrets*, by "N.F. 1604," we read—

I think meete to acquaint thee from whence our great plentie of fruit came. One Richard Harris, of London, borne in Ireland, Fruiterer to King Henry the eight (1509-1547), fetched out of Fraunce great store of grafted, especially pippins; before which time there was no right pippins in England. He fetched also, out of the Lowe Countries, Cherrie grafts and Peare grafts of diuers sorts.

What stocks these grafts were worked on is not mentioned.

The Country Man's New Art of Planting and Grafting, practised by Leonard Mascall, 1652, gives directions—

For to make young trees of the Pepins of Apples, Pears, Plums and Services . . . take of the Pepins or Pomes of the said fruit at the first pressing out of ye liquor before the kernels be marred or bruised (and plant them) . . . When these wild Cions shall be great, as of the growth of one year, yr must then pluck them up all in the winter following . . . and make of them a wild Orchard . . . set yr wild trees so far one from another as ye think meet to be graffed. . . . In what part soever ye do set yr trees yr must cut off the great master root, within a foot of the stock and all other big roots . . . Then after five or six years' growth, when they be so big as yr finger or thereabouts, ye may remove any of them whereas you will have them grow and remain . . . About two or three years after their removing ye shall graffe them.

The next paragraph, headed, "Of negligence and forgetfulness," is most interesting.

If peradventure ye forget and have let small Cions two or three years grow about the roots of ye stocks . . . ye may well pluck them up and set them in ranks, as the other of the Pepins.

This, I think, points to the origin of the dwarfing stocks for Apples. Among Apples raised from seed, some will occasionally be found with a surface-rooting nature which make but little

growth. These would naturally get left behind in the wild orchard as the others were "plucked up," and eventually form stools as described above, the mother plants of dwarfing stocks. Mascall mentions that if—

the Pepins be sowed of the Pomes of Pears and good Apples . . . ye shall find that some of them do leave the tree whereof they came . . . If ye will augment trees of themselves, ye must take Graffes and so graffe them.

In the chapter of "Setting Trees of Nuts," we learn that Peaches, Almonds and Apricots "all these do love the trees they came of," and, presumably, were not propagated in any other way than by seed.

Sower Cherries . . . will grow of stones, but better it shall be to take of the small Cions which do come from the roots: then plant them.

Great Cherries were to be grafted on their own seedlings or on trees of the sower fruit.

Ye must have respect unto the Healme Chery, which is graft on the wild Gomire [Gean] (which is another kind of great Chery), and whether you do prune them or not, it is not materiall; for they dure a long time.

Plums and Damsons were propagated by suckers, or

if your Plum tree be graft already and have the like fruit that ye desire, ye may take your graffes thereof and graffe them on your Plum tree.

So far, Mascall is reasonable, but after this he lapses into extravagant suggestions.

R. A. Austen, in his *Treatise of Fruit Trees*, 1653, recommends seedling stocks as being far better than suckers, and mentions different stocks by name. Also, he is under no illusions:—

. . . the Plants you intend to Inoculate must be like (as to general kind) with the Buds that you intend to set on. As Apricot Buds and other Plum-Buds on Plum stocks that are wild stocks: the White Peare plum stock is accounted the best to inoculate Apricot buds on, or other choice Plums. As for stocks fit for Apple Grafts, I account Crab trees better than sweeter Apple trees to graft, because they are usually free from the Canker . . . and I conceive will last longer than Stocks of sweeter Apple trees. The best kind of stocks to graft Peare-grafts upon are such as come of the seeds or kernels of Peares. I know no difference amongst these, but all are good to graft upon. And I utterly dislike grafting these fruits upon White thorne, or upon any kinde of stocks beside Peare stocks. The fruits are naught (having a hard and stony core) if grafted upon a Thorne tree. Concerning Stocks fit for Cherry-trees, I account the black Cherry stock the best to graft any kind of Cherry upon. Yet some say the red Cherry stock is best for May Cherries. But the black Cherry stocks are goodly straight Plants full of sap and become greater trees than the red Cherry trees. There are very many kinds of Plums, many more than of Cherries. I esteem the Muske Plum one of the best, being a faire large black Plum, and of excellent relish and the trees beare abundantly.

The Mussel is now used for stocks perhaps more than any other Plum; the above description would be considered over-flattering for its fruit nowadays.

The White Peare-plum stocks are accounted the best and the Damson stocks the worst, as being dry stocks. I account the White Peare-plum stocks the best to inoculate Apricot Buds upon, although they may be done upon other Plum-stocks with good success. The best kind [of Nectarine] that I know is the Roman red Nectarine. But it is very hard to be propagated. . . . I hold it best to inoculate [it] upon the Branch of an Apricot which before hath been inoculated upon a good Plum stock.

This is the first notice I find of double-working.

Of Peaches there are divers kinds. . . . These require choice Plum-stocks to be inoculated upon, as the White Peare-plum stock, or else stocks comming of Peach stones.

It is curious that Austen says nothing of Quince stocks for Pears in the foregoing descriptions, as, in his "Observations upon some part of Sr. Francis Bacon's *Natural History*," dated only four years later, 1658, we find—

. . . If we graft upon a stock that naturally beares a sower, harsh fruit, the fruit of the graft will not be altogether so pleasant as if it were grafted upon a stock that beares naturally a sweet and pleasant fruit: and hence it is that Peares grafted upon Quince-stocks will be more delicate than upon Peare-stocks. The Quince-stock gives an excellent tast to it, but these trees upon Quinces will never attaine to any bignesse.

Can it be that the use of the Quince as a stock had only just then been introduced?

Wm. Lawson, *A New Orchard and Garden, Particularly in the North*, 1656, remarks that for setting an Apple Orchard—

Some for readinesse use slips, which seldome take root. . . . A Burr-knot kindly taken from an Apple-tree is much better and surer. . . . Or if it please the planter he may let his bough be crooked and leave out his top end one foot . . . wherein will be good grafting, it either you like not or fault the fruit if the bough (for commonly your Burr knots are Summer fruit). The usual kind of Sets are plants with roots growing, of kernels of Apples, Pears and Crabbs, or stones of Cherries, Plums, &c., removed out of a Nursery, wood, or other Orchard, into, and set in your Orchard in due place.

John Evelyn, in *Pomona*, 1678, an appendix to *Sylva*, concerning fruit trees in relation to cider, says—

We shall find the Wilding to be the hardest and most proper Stock for the most delicate Fruit. . . . However they do in Herefordshire, both in practice and opinion, limit this rule; and to preserve the gust of any delicate Apple . . . rather graft upon a Grandet Male . . . than a Crab stock, but then indeed they conclude the Tree lasts not so long. . . . The Grand Male is commonly propagated by cutting off the branch a little below a Burr-Knot and setting it without any more ceremony.

According to Koch, *Die Deutschen Obstgehölze*, 1876, the French Paradise was known in France as early as the beginning of the 15th century, the first published account of the fruit appearing in Jean de Ruelle's *De Natura Stirpium*, and was considered as one of the most highly flavoured Apples then grown. This evidently is not the Apple which is used as a stock, accurately and succinctly described by Parkinson, *Paradisus Terrestris*, 1629.

The Paradise apple is a faire, goodly yellow apple, but light and spongy, and of a bitterish sweet taste, not to be commended.

John Reid, *The Scots Gard'ner*, 1683, is the first English gardening author I have come across who mentions this stock and its object—

To make dwarfe Aples, Graff or bud on the paradise or any that hath Burry-knots, Codlings, Redstracks, &c. Dwarfe Pears on the Quince, but no Pear holds well on it (that I have try'd) save Red Pear Achans and Longavil, but you may regraft for varieties. . . . Dwarfe Cherries on the Morella, or on the common Red Cherrie. Or on that Red geen which is more Dwarfish than the black.

Horticulture in France was earlier developed than in this country, as we have already seen from *The Fruiterer's Secrets*. The training of fruit trees in various shapes was something of a fine art, and stocks for them received, therefore, closer attention. The appearance of *The Compleat Gard'ner*, by the famous Mons. De la Quintinye, Chief Director of all the Gardeners of the French King (Louis XIV., 1643-1715), made English by John Evelyn, Esquire, 1693, no doubt gave a great impetus to our fruit culturists. He mentions special

Quince Stocks . . . such as are very sound and produce large Leaves and fine shoots, and have a smooth shining blackish Bark (. . . call'd Females). . .

Apples upon "Paradise-stocks"

with this difference only, which seems surprising between the Quince and Paradise-stocks, that the Paradise-stocks being anything large, are extraordinary good Grafted in the Cleft, and seldom succeed Grafted with a Scutcheon [i.e., budded]; whereas it is the clean contrary with Quince stocks . . . Apple-trees . . . Grafted upon Paradise-stocks . . . quickly bear Fruit, and shoot but little wood; [those grafted upon Apple Wildings] are a long while producing nothing but a vast quantity of Wood.

Plum trees are grafted or budded

upon other Plum-Trees, and that only upon a small number of kinds, for Instance, upon St. Julians, Black Damask and Little Cherry-Plum, &c.

Peaches, to succeed well, must be Budded . . . either upon St. Julian Plums, or Black Damask, or upon Apricot Trees already Grafted, or upon young Almond-Trees of that year's growth; they seldom succeed upon Stones of other Peach, or Apricot Trees.

All . . . kinds of Cherries are Grafted except the Merisiers, or small white bitter Cherry which are not worth it, but . . . [as] Suckers, are very good Stocks to Graff other Principal kinds upon.

John Lawrence, *The Cheryman's Recreation*, 1714, mentions—

the Pear-plum, Muske or Bonum Magnum Plum, which have been found by long experience to be better and more lasting than any other [stocks for Peaches and Apricots]. The best Plum will do on any ordinary Plum or Succor. Black Cherries are the only Stocks, whereon to raise all the several sorts of Cherries. . . . Many recommend Grafting the Pear on a Quince Stock . . . but they are not long lived, do not bear such fair large Fruit, nor make such handsome regular trees, as those grafted on a Pear-stock.

Batty Langley, *Pomona*, 1729, says—

Apples are grafted on Crab Stocks, raised from the Kernels of the Crab, as also on Stocks raised from the Kernels of Apples, of which that called the Paradise, is the best to graft on, to make Trees of a small Growth, and produce Fruits in great plenty very early.

Stephen Switzer, *The Practical Fruit-Gard'ner*, 1731, speaks of Nectarines doing better on the Margaret Stock (as it is call'd) much resembling the French stock (of St. Julian) in its shooting but differs in its leaves.

This stock is never heard of nowadays.

Speaking of the double-working of Peaches upon Apricots—

I am told of the Brussel kind (of Apricot) that are Brussels and Brada. . . . they find so White Bullace Stocks, which they say is of much Advantage to them, as to their bearing a greater number than ordinary. To conclude this Account of the Kinds of Stocks proper for grafting, &c., the Dwarf-Medlar is by some used

for dwarfing of Pears, as the Paradise Stock is for dwarfing of Apples and the Bullace for Apricots.

(Miller says the Brussels Apricot was usually budded on St. Julian.) Again, in a note to the plan of a garden (p. 305)—

The little Dwarf-Trees which are in the middle border, between each Wall are designed for Apples on the right French Paradise stock, Pears on the Dwarf Medlar.

It looks as if they had more than one Paradise stock even then.

A *Treatise of Fruit Trees*, by Thomas Hitt, 3rd edition, 1758, makes mention of several stocks not previously spoken of—

The stocks upon which I have found the Apricot to prosper best and yield the most palatable fruit are the common red wheat Plums; they have a tart taste, and are stocks tolerably free from gum and suckers, and may be raised from stones or layers. . . . Of stocks proper for Apples there are several sorts made use of; as those raised from crabs and apple kernels, from layers of the codling, paradise and creeper apple-tree; I don't well know what sort of fruit the last bears; but trees which I have known propagated upon them are of an extremely slow growth, and may therefore very justly be called dwarfs.

Was this the right French Paradise and the "Paradise" the Doucin?

He says the stocks generally used for Nectarines and Peaches are the Muscle and Wheat Plum, and recommends double-working for those kinds which will not thrive direct on them, using, as intermediary, seedling Peaches and Nectarines, or else Apricots.

The best plum stocks for peaches and nectarines are the greengauge, either raised by stones or layers.

On which stock he also says the best sorts of Plums do mighty well.

Philip Miller, *The Gardener's Dictionary*, 1759, says—

The Paradise Apple hath, of late years, greatly obtained for Stocks to graft or bud upon, but these are not of long Duration; nor will the Trees grafted upon them ever grow to any Size, unless they are planted so low as that the Cyon may strike Root into the Ground, when it will be equal to no Stock, for the Graft will draw its Nourishment from the Ground, so that it is only by Way of Curiosity, or for very small Gardens, that these Stocks are proper, since there can never be expected any considerable Quantity of Fruit from such Trees. These Trees have been much more esteemed in France, where they were frequently brought to the Table in the Pots growing with their Fruit upon them, but this being only a Curiosity, it never obtained much in England, so that the Gardeners do not propagate many of them here at present. There is another Apple which is called the Dutch Paradise Apple, much cultivated in the Nurseries for grafting Apples upon, in order to have them Dwarfs; and these will not decay or canker as the other, nor do they stint the Grafts near so much, so are generally preferred for planting Espaliers or Dwarfs, being easily kept within the Compass usually allotted to these Trees.

The first stock seems to answer to the right French Paradise, the second to the Doucin.

A standard work of its time is the *Traité des Arbres Fruitières*, Duhamel du Monceau, 1768, who mentions the Mahaleb—

Stocks of Quince, Cerisier de Sainte Lucie (Mahaleb), Doucin and Paradise are more generally raised from layers, than as seedlings.

Miller describes the Mahaleb Cherry, but does not mention its use as a stock.

Apples are grafted, 1stly on the free-stock, which produces trees suitable for the orchard. Secondly on Doucin, this forms middle-sized trees, bushes, espaliers and half standards; when the soil suits the Doucin the trees grow almost as large as those on free stocks. Thirdly apples grafted on the dwarf Apple of Paradise do for low trained trees or very small bushes, scarce three feet high. They fruit much sooner, give larger proportional crops, and the fruit is much bigger than on the free or Doucin stocks.

In *Encyclopædia of Gardening*, J. C. London, 1824, gives as the dwarfing stocks for fruit trees—the Doucin, the Doucin and creeper, for apples; the Doucin, the Doucin, Bullace, for plums; and pertumid (Mahaleb) and wild red cherry for cherries.

The first English mention I have found of the Mahaleb as a stock.

In *A Guide to the Orchard and Kitchen Garden*, John Lindley, 1831, speaking of the Doucin stock, says it—

is most generally, in our nurseries, called the Paradise stock, although widely different from the Prime Paradise of the French, a sort not worth growing in this country. Apricots are budded principally upon two sorts of stocks, the Muscle and the Common Plum. . . . these are, however, by many nurserymen, budded upon the Brussels, and another by name of the Brompton stock. When temporary standards are wanted, the practice of budding standard light upon the Brussels stock may be allowed; but to bud Apricots or other fruit upon the Brompton stock is a practice which ought to be discontinued even for a temporary purpose.

Trees on the Brompton make very long, sappy, long-jointed growth and flower very sparsely.

Finally, we come to the *Miniature Fruit Garden*, 1859, 8th edition, by Thomas Rivers, my grandfather, in which he mentions—

About forty years since (1820), I raised a large number of apples from the pips of the Golden Pippin, Golden Reinette, Ribston Pippin and other esteemed sorts. These in course of time all bore fruit, but as not one was found superior to its parent, I didn't cultivate them. Why I mention this is, that among my seedlings were several that put out roots near the surface, and the cuttings of which struck root. It is only within these few years that I have had my attention drawn to one of these, which has very broad leaves, and a most healthy and vigorous habit. It roots freely at the surface, and bids fair to be a very superior stock for garden apple trees.

This stock is again spoken of in the 17th edition, 1873, and another with

a habit equally vigorous, but with a great tendency to form fruit spurs. The former I have named the Broad-leaved Paradise, the latter the Nonesuch Paradise;—they are likely to form a revolution in apple culture, as the varieties of apples grafted on them formed such healthy and fruitful trees.

This then is the origin of the stocks which are now recognised as fulfilling all my grandfather claimed for them. We should especially note that the Broad-leaved Paradise, which is "a variety of Doucin," was simply a seedling from one of our ordinary dessert Apples.

Again we read (17th edition)—

I have at this moment (Sept. 1870) a full collection of all the Paradise stocks known in Europe. There are three varieties of the French Paradise all making very dwarf trees; then come three Dutch Paradise, all much alike, but slightly more vigorous than the French sorts; next to them are two English Paradise, both of them from old English nurseries—they have much resemblance to the French Doucin stock, but are better, swelling with the graft. The Creeper Paradise is probably that mentioned by Miller, in the last century, since it is very remarkable for putting forth suckers from the roots, objectionable, but not common with the apple tribe. The Nonesuch Paradise stock, raised here from that very old apple the Nonesuch of Queen Bess's time, is quite sui generis, for it has downy leaves and a knotted stem, but is wonderfully fertile. The Broad-leaved . . . is much like the best of the Doucin stocks of which there are endless varieties; one of the best in my plantation is good and much like the last-named. The Miniature and Pigmy Paradise, both raised from seed here, have the dwarf habit of the French Paradise.

I have thus enumerated 14 kinds of Paradise stocks, the three first and the two last remarkable for giving very dwarf trees; all the others are of the same nature as the Doucin, all giving healthy trees.

The Pommier de Paradis, or the French Paradise, seems identical with the "dwarf Apple of Armenia," referred to in the *Journal of the Horticultural Society* (of London), vol. iii., part ii., p. 115 (1848). It is exceedingly dwarf in its habit and too tender for this climate, unless in very warm and rich soils. Out of 2,000 imported in 1848, more than half died the first season, and two-thirds of the remainder the following. The same result attended an importation in 1866.

Much confusion has prevailed about Paradise stocks, and many have been the theories as to their origin and introduction. I think, judging from the preceding extracts, we may safely conclude that they are all simply Apple seedlings, i.e., free-stocks, which have arisen in an ordinary way in Italy, France, Holland or this country.

The name, applied to many totally different varieties of the Apple, has greatly helped to muddle matters. A fruit which seemed to possess extraordinary beauty must have been worthy of the Garden of Eden, if it did not originate there, and was christened "Paradise." What more striking and worthy of the name than the first little Apple tree, 3 feet high and loaded with fruit, grafted on a dwarfing stock which appeared amongst the other free stocks in the nursery. A gift of the gods, direct from Paradise! Most of the stocks now in use, and many which have dropped out, have, I think, now been mentioned.

I seem to have quoted very freely, but, in the words of John Evelyn, it "preserves the gist" of my authorities which would otherwise be lost.

Dates.

Stocks.

- 1653. White Pearle Plum, Whitethorne.
- 1658. Quince French Paradise (1600).
- 1683. Paradise, Morello, Codling, Redstrack.
- 1693. St. Julian, Black Damask, Cherry Plum.
- 1714. Muscle, Bonum Magnum.
- 1731. Margaret, White Bullace, Dwarf Medlar.
- 1758. Red Wheat Plum (Codling), Creeper Apple, Greengauge.
- 1759. Dutch Paradise.
- 1768. Mahaleb (1824) Doucin.
- 1831. Brussels, Brompton.
- 1859. Broad-leaved Paradise.
- 1870. Nonesuch Paradise.

(To be continued.)

INTERNATIONAL HORTICULTURAL EXHIBITION, 1912.

OCTOBER 25.

On Tuesday last at 12 o'clock noon a meeting of the secretaries recently appointed to represent counties in England and Scotland, Ireland and Wales was held in the Hotel Windsor, Victoria Street, Westminster, to consider certain details regarding this exhibition. Mr. Gurney Fowler, chairman of the Executive Committee, presided, and the attendance numbered between 40 and 50 representative officials.

At 1 p.m. the provincial secretaries joined the members of the General Committee at luncheon. There were 100 members present.

Immediately after luncheon, in the Hotel Windsor, the Chairman, Mr. J. Gurney Fowler, said: On behalf of the Executive Committee of the International Exhibition, 1912, I beg to thank you all heartily for having come to this meeting and for showing the interest you take in the affairs of the exhibition which is to be held. You will remember the meeting which took place in April of this year, at which Sir Albert Rollit was present, and at which an exhibition was decided upon, and a Provisional Committee appointed to take the preliminary steps. This Provisional Committee came together and elected other gentlemen to join them to assist in forming an Executive Committee. The first thing the Executive Committee dealt with was the financial responsibility devolving upon those gentlemen who had met and decided to hold this exhibition. It was conceded that it could not be carried out without considerable expense, and it was recognised that, in the event of their being a loss, the members of the Executive Committee would have to bear it. It is expected, however, that the cost of the exhibition will be defrayed out of the receipts. The Committee thought the matter over and came to the conclusion that the best course to adopt was that a Company should be formed to carry out the work of this exhibition. We went to the Board of Trade and obtained their authority to form a company, as I have described, and, inasmuch as the profits, if any, will go to some charity or some kindred philanthropic or scientific institution connected with horticulture, and in respect of the directors having no remuneration for the work which devolves upon them as directors, the Board of Trade have authorised the company to be registered without the word "limited" being added to its name. All that the Executive Committee has done has been done provisionally, and their acts will have to be adopted by the company which is about to be registered. It has a capital of £1,000 nominal, and I believe all the members of the Executive Committee will put their names to the articles of association, making them responsible for the amount of the capital. One of the first things the Executive Committee did was to appoint a Finance Committee, a Schedule Committee, a Reception Committee, and a Show and Site Committee. These committees have met on several occasions, and have passed resolutions which I propose to deal with shortly. First, a circular was sent out to the principal people in the country, to the King and Queen, and to all the members of the Royal Family, practically all of whom have agreed to become patrons, to men of influence in the country, and most of these have consented to become vice-presidents. There are, no doubt, some names which we have omitted. If any gentleman knows of any such, and will send the name to the Executive Committee, we shall be very glad of it. The next step which the Executive Committee took was to get together a General Committee, and the members of that committee are present in the room now to a large extent. I am glad to see that so many gentlemen have attended, and it is understood that all present will do their utmost for the benefit of the exhibition. We had a meeting at 12 o'clock, at which about 40 secretaries of local committees from the counties attended, and we discussed generally the duties which will devolve upon the local committees which are about to be formed all over the country, our object being to get the whole of England, Scotland, Wales and Ireland interested in the exhibition which is to be held. We next approached the official representatives of the various

Colonies, and they have all accepted the invitation to serve upon the list, which ought to be called the "list of honour." Invitations have been accepted very cordially from France, there is a very keen interest being taken among Continental horticulturists in the exhibition, and I have no doubt we shall have a great number of visitors from abroad. As to finance, I have mentioned that it has been decided that any surplus funds will be devoted to some scientific or charitable purpose connected with horticulture. The cost of the 1866 exhibition was about £12,000, and they were not only able to pay that sum, but had an available profit of £3,500 after paying all expenses. We hope that this exhibition will be a much larger one, and that it will be equally successful. I shall not be at all surprised if it is not much more successful than the earlier one, though I do not wish to prophesy on the subject. As to the guarantee fund, the Royal Horticultural Society has promised us £4,000: the guarantee has not been entered into yet, but it will be so soon as the company is registered. If we get £4,000 from other parties, we shall get £4,000 from them. We shall want considerably more than that, however, but we give certain privileges to guarantors in the way of tickets which I may describe to you. If we have a guarantor of £100 we give him a free transferable ticket for the whole period of the exhibition. A guarantor of £50 will have one transferable ticket for the opening day and one day during the period of the exhibition. Subscribers of 10 guineas and upwards will receive tickets to the value of about 20 per cent. above the value of their subscriptions. Subscribers of less than 10 guineas will receive tickets to the value of 5 per cent. above every two guineas subscribed. This works out in this way: a subscriber of 10 guineas will be given tickets for 12 guineas, 15 guineas to the value of 18 guineas. I may say that several donations and large subscriptions have already been promised, but we are not attempting to secure guarantors and subscribers until the company has been formed, and the first thing to be done then will be to adopt all that has been done by the Executive Committee. We are going to prepare very shortly a statement showing what we expect the expenses of the exhibition will be, so as to be able to approach the guarantors and say how much we want them to guarantee. Sir Jeremiah Cohnan has taken upon himself the honorary work of the treasurer, and we could not have found a man more capable of carrying on the work. The Schedule Committee have had an immense amount of work. I am sure all the members of that committee deserve the greatest amount of credit for their labours. I am thankful to say I am not a member of that committee. Mr. Veitch, Mr. Hudson, Mr. Fielder, and several other gentlemen have had a heavy burden upon them for the past two or three months in preparing that schedule. Everyone has their own hobby and wants more space than they are entitled to, and it is a very difficult matter for the committee to decide what space is to be given to each different object exhibited in the show. The limitations of the space imposes great difficulty on the committee. There will be no Temple Show in the year in which this show is held, which shows the goodwill of the Royal Horticultural Society towards this of ours. There has been a great deal of criticism about our exhibition—that it will be little more than a glorified Temple Show. I should like to say that it is the wish of the Executive Committee, so far as it lies in their power, to hold a real international exhibition. We appointed a Site and Show Committee, who went very carefully through the various sites available for the exhibition, and they have fixed upon the Chelsea Hospital gardens site. It was thought that that land, of about 16½ acres, with an additional three or four acres of trees and shrubs, and within five minutes walk of Sloane Square Station, was the best. It is rather smaller than we should like to have, but the shrubs and trees will form a very good background to the various outdoor exhibits. We have arranged to allow ample time before the show for the receipt of exhibits, and also after the show for their removal, and the rent will be £500. With regard to the date of the show, that required some serious consideration, and we have fixed upon May 22 to May 30, 1912. The former date is a Wednesday, and the Monday after that is Whit-Monday, and the 30th is a Thursday. During that week is Derby Day, so that, from various reasons, we hope our show

will be held in what may be called the centre of the London season. People may come up to town for Whit-Monday and the show, and others may come for the Derby and the show. We will get them all into the net. The Royal Horticultural Society has not only promised us a guarantee of £4,000, but also £1,000 for expenses, which latter sum is not returnable in any shape or form. As to the Reception Committee, no definite programme has been decided upon, and we hope that a series of entertainments worthy of the occasion will be organised. We have asked the Royal Horticultural Society to hold their hall at our disposal for a certain period of time, so that we can make up our minds as to what is to be done in the way of entertainments—either an exhibition of paintings or something of that sort. We should have some hall to fall back upon, as it would give us a little more time to turn round. As to the posters, we have asked Mr. John Hassall to design an advertisement poster, which will be used instead of a crest of the exhibition without our having to pay anything for armorial bearings. Ours will be something after the style of the Brussels Exhibition poster—and, whilst the general posters will be very large, the same design will be reduced to the size of a stamp, which will be embossed on envelopes sent out from the exhibition. As to advertising, we have asked the nurserymen to put a slip in their catalogues, and some 400,000 slips have been so issued. More will be sent out next year, much to the advantage of the exhibition. We approached the members of the Press to appoint a Press Committee, and the result was that Mr. R. Hooper Pearson was appointed a member of the Executive Committee as their representative. As the work which we have done is work of a preliminary character, that work will have to be taken up by the company when it is registered, and we hope that when the circulars are sent out inviting guarantors and subscribers they will be received and met on a business footing. Concluding, the Chairman said that Mr. Edward White had been appointed hon. secretary of the Executive Committee, and he might say for himself, as chairman of that committee, we should have found great difficulty in finding such another for the work.

Sir Albert K. Rolitt moved the first resolution. It was, he said, a pleasant and easy task. They were now to be asked to join him in expressing approval—and after the luncheon they had enjoyed, they would have no difficulty in doing so—of the show. The resolution he was going to ask them to approve was: "That this general meeting"—men proposed and the public disposed and, therefore, it was necessary to have general assent—"approved of the proposal for an international horticultural exhibition in 1912, in accordance with the explanations of the chairman of the executive committee, and pledged itself to work in order that it may be a thorough success and creditable to the country." The chairman had told them that a great deal of organisation would be necessary, and the fact that some guarantors and subscribers would be necessary must not be overlooked. They could do the Samaritan on "the oil and tuppence": but, at some period, they would be asked for "the oil and the tuppence," whatever excuse they might give. The assent was necessary, because in this democratic age, one did not like one-man shows; they liked everybody to take their part and join in the ultimate group and design, and by organisation, by attracting all the energy, and enterprise, and public spirit, and local patriotism of the whole country, to show that the horticulture of England, like nearly every other form of enterprise, was still capable of meeting and beating the whole world. Most of them had no part in the show of 1866; they only admired what was then done. It was a great success. But they had the names of those who managed it—the Veitches and others still surviving, and Mr. White, the secretary, with the chairman of the executive and schedule committees, and these were, in themselves, a guarantee of success. Now what was wanted was that, while they were proud of their nation, while they knew—thanks very much to the R.H.S. and their support of it—that British horticulture headed the horticulture of the world, and there were no shows which were equal to theirs—probably there never was an assemblage of plants and flowers equal to those at the Temple and Holland House Shows—that was the standard they had

to maintain. They meant to keep this country in the van and the leadership of the world. But we lived in an international age. Every day, thanks to the telegraph and the telephone, the world is made one, and, within certain limits, national enterprise is being compared with national enterprise, and hence there were many excellent exhibitions, such as Milan and Liège, in which they met the forces of the world. If they were to teach the world lessons then, they must do all they could to make this show a grand success. We were not often first in the race, all our great industries, textile and others, were brought from abroad into this country; but when we applied to them British practical insight and enterprise, we soon assumed first rank, and entered into friendly competition with the rest of the nations of the world, and this would affect the peace of the world. It was this comparison of enterprise which stimulated them to attain to the headship of the world. Exhibitions were a great advertisement. Shakespeare said, "Sweet are the uses of advertisement." He didn't say so, but it was all the same; we had to illustrate what we could do by following other nations, as well as to use and take advantage of what they were doing. The trade of the world moved in cycles, times of prosperity and times of depression, which ought to be used to more advantage. We had seen times of depression succeeded by a wonderful development of the industry and trade of our own country, and in that way they promoted the trade not only of this country, but the trade of the empire to which they were proud to belong. He suggested that in the programme of the show they should include a conference on horticultural education. It was only by hearing the accumulated experience of the world that they could advance in the practice of their profession. They must not ignore theory and science; it was quite wrong to say that what was theoretical was not practical. What he wanted them to realise was that, whatever they had accomplished, there was still a great deal more they could do; that the old exhortation about making two blades of grass grow where one grew before was now obsolete, and that more could be accomplished by union with science and the promotion of practical knowledge, and thus carry on the work of horticultural education. One more reason for this conference. We lived in an international age, and no sane man could escape contemplating the possibility of a great European war. The fact that such an event was possible made the position of our country constantly uncertain, and the promotion of interchange in matters horticultural, inter-communication with and welcoming foreigners, and extending to them our hospitality and goodwill, would teach our potential enemies that we wished to be friends with them, and with all the world, and to do all they could to bring about the day when the barrier would fall down between nation and nation, and be set up only between right and wrong. It was in the hope of the extension of the Olive branch to their foreign friends that he asked them, as citizens and patriots, to render a great and creditable success this international gathering.

Mr. Graham Anderson, who seconded the proposal, said the question had been asked him how far this exhibition was international? Had the Executive Committee made any representations to Continental nations? He understood that a representative of the Holland Ministry of Agriculture was present, and that he would be willing to co-operate with others in this matter. He suggested whether it would not be advisable to have on the executive committee representatives of any Continental nation who might be in London, so that they could go hand in hand with them. He thought the conference at the exhibition should take some practical form, and that papers might be read, for instance, on the life and history of insect pests, and the methods of exterminating them.

Mr. Alex. Dean pointed out that the absence of a show at the Temple would be a great loss to the Fellows of the Royal Horticultural Society. He would like to see at the exhibition a great gathering of the gardeners of the United Kingdom. His heart went out to the gardeners because of the isolated positions they occupied, and any proposal that would bring them together, even for a short period, would be very desirable.

Dr. Van Ryn thought they did well to stretch out the hand of welcome to the foreigner, because

nothing could tend more to strengthen the desire for international peace than this bringing-together of an international gathering, at which there could be interchange of ideas—it would be of the very greatest importance. If it was desired to make the exhibition truly international, they should seek the good offices of representatives of the countries likely to send exhibits. Then there should be committees abroad who would take charge of the exhibits. On behalf of the country he represented, he said he would be very glad indeed to do all he could to make the exhibition a success. As regarded the quality of the exhibits, he thought it would be difficult to beat the Englishmen. He had been living in this country for years, and he knew, as regarded the growing of flowers, the high standard that was maintained here. The gardens of the International Peace Palace at the Hague were to be laid out by an Englishman.

The Chairman remarked that in a few days the exhibition schedule would be out, giving the various classes for which exhibits would be asked.

Mr. Reginald Farrar advocated a section for Alpine plants, and he suggested that such plants should be judged by specialists in Alpines.

Mr. Spencer Pickering, referring to the mention of garden pests, thought it would be an excellent thing to see that some part of the proposed conference dealt with them. Gardeners knew very little of the life history of these destructive insects, and the public still less, and this ought to be remedied.

Replying to the observations made, the Chairman dealt first with the suggestion of Mr. Graham Anderson that there should be foreign representatives on the Executive Committee, that question had, he said, been carefully looked into, and it was found that in the international exhibitions which had been held all the work had been done by gentlemen belonging to the nation giving the exhibition. They had several gentlemen on the executive who had attended many foreign exhibitions and knew how these matters were conducted. Mr. O'Brien hoped that the exhibits of foreigners would be well looked after while here—he could promise that this would be satisfactorily attended to and that every facility would be given to foreign exhibitors. As to Mr. Dean's remarks, they did not want shareholders; what they wanted were—guarantors and subscribers; shareholders would have the pleasure of holding to the shares, on which there would be no dividend, and he did not think anyone would aspire to that undesirable position. As to the judges, they would do their best to have men of standing for the different classes and they would get foreigners to assist in the judging. Then, as to the Reception Committee, it would arrange special days for special objects, but no programme had been arranged, as the committee had not yet met. They had practically decided to do what Dr. Van Ryn had suggested. He did not think they would approach the Governments of foreign countries, but the committee thought of having gentlemen who would represent their respective countries to get together and arrange for the exhibits being sent over here. He (the Chairman) was glad of the suggestion as to approaching the Governments, and he would see what could be done with it. The Executive Committee were discussing whether it was desirable to have money prizes, or, on the contrary, limit the awards to diplomas of honour and medals.

The Chairman here put the resolution, and it was carried enthusiastically.

Mr. Arthur W. Sutton proposed a vote of thanks to the Chairman. They all knew, he said, the strenuous work Mr. Gurney Fowler had done for this exhibition. It was no easy task to be chairman of the Executive Committee and to explain for the first time with such lucidity the extraordinary ramifications this exhibition had acquired. To be chairman of such an enterprise was to be one man among ten thousand.

Mr. John Green having supported the vote, it was carried with applause.

Mr. Veitch proposed a vote of thanks to the secretary, Mr. White, whose extraordinary efforts he hoped would result in a successful show. This was seconded by Mr. Whitton, and carried amid applause.

The Chairman and Mr. White having acknowledged the compliments paid them, Mr. Veitch announced that the committee had received the promise of a valuable case of insect exhibits from France, if room could be found for it.

ENQUIRIES AND REPLIES.

TO DESTROY ANTS (see p. 308).—If 8 ounces of soft soap are divided into small portions and allowed to dissolve, with an occasional stir, in a gallon of cold water, the solution will destroy ants without injuring the roots of plants. Petroleum has been known to kill Peach trees when applied near their roots. *Wm. Taylor, Bath.*

ANSWERS TO CORRESPONDENTS.

APPOINTMENT IN THE COLONIES: *A. H. H.* Most gardening appointments in Government Stations in the Colonies are filled through the Director, Kew Gardens. The posts usually fall to young gardeners selected from the staff at Kew Gardens.

BISULPHIDE OF CARBON: *E. H. J. Townsend.* The application of bisulphide of carbon is best made with a glass syringe, or the special apparatus (Vermorel injector) sold for the purpose. If the former is used the fluid must be injected into holes previously made with a pointed stick from 1 to 1½ inch in diameter. The depth of the hole required depends upon the stratum in which the pests occur; anything between 8 and 12 inches will do, but the gas given off is heavier than air and will find its way downwards. Close the holes by pressing the soil firmly. Tiles may be placed over the apertures if desirable. You cannot remove the carbon bisulphide after it has once been applied. It is highly inflammable. The specimens sent are millipedes, not "wire worms." As a preventive, do not use leaf-mould or an excess of manure. Lime is a good deterrent, and, if bits of Mangolds are buried shallowly, the insects may be trapped in numbers.

CELERY AND BEGONIA DISEASED: *J. J.* The Celery is affected with Celery heart rot caused by Botrytis. The soil contains the spawn of the fungus, and should be treated with gaslime. The plant of Begonia Gloire de Lorraine is attacked by "club." Cuttings from diseased plants should not be used for propagating purposes. Diseased plants cannot be cured.

CELERY DISEASED: *J. H.* The disease is caused by the fungus *Septoria Petroselinii* var. *Apii*, a fungus disease which is much on the increase. Nothing preventive can be done this season, but the affected foliage should be collected and burnt. Next season spray the foliage before the disease appears with the Bordeaux mixture. This specific may be made as follows: Slake 1 lb. good quicklime (in lumps) with 6 gallons of water; dissolve 1 lb. of bluestone (copper sulphate) in 6 gallons of water in a wooden receptacle; mix the two together, and apply at once in the form of a very fine spray.

INSECTS ON CHRYSANTHEMUMS: *J. Page.* The larvae on the Chrysanthemums are those of one of the Hover flies, *Syrphus* sp. All the members of this genus of flies are predaceous, feeding exclusively on plant lice of various kinds. They are, therefore, beneficial in the same way as the larvae of ladybird beetles (Coccinellidae), and should not be destroyed.

NAMES OF FRUITS: *C. King.* 5, Castle Major; 7 and 25, Lady Henniker; 17, Small's Admirable; 34, Manks Codlin; 20, Winter Hawthornden. We cannot undertake to decide which are dessert or cooking varieties; several sorts are suitable for both purposes. Nor can we say the best time for gathering the fruits; as much will depend upon the locality and other circumstances. A good guide is to split the fruits, and if the pips are black or nearly so they are ready for gathering.—*C. W. T.* Minchull Crab.—*E. T.* The brownish fruit is Northern Greening; the green one French Crab. It is not remarkable to find two sorts growing on the same tree.—*H. B.* Flower of Kent.—*Paper Mill.* 1, Mère de Ménage; 2, Hubbard's Pearmain; 3, Dean's Codlin; 4, Golden Reinette; 5, Pile Russet.—*W. T. C.* Dredge's Queen Charlotte.—*W. S.* 1, Herefordshire Beating; 2, Crofton Scarlet; 3, Kerry Pippin; 4, Old Nonesuch; 5, The Queen; 6, Lane's Prince Albert.—*H. T. Eldridge.* Apple. No Core.—*E. Sherwell.* 1, King of the Pippins; 2, Dumelow's Seedling (syn. Wellington); 3, Small's Admirable; 4, Lord Burghley.

NAMES OF PLANTS: *A. S., Gros.* 1, *Choisya ternata*; 2, *Lycasteria formosa*; 3, *Diosma ericoides*; 4, *Jasminum ligustrifolium*; 5, *Cymbidium giganteum*.—*A. Subscriber.* *Pernettya mucronata*.—*H. Rabjohn.* *Pittosporum tenuifolium*.—*L. C.* 1, Send better specimen; 2, *Phytolacca acinosa*; 3, *Boltonia asteroides*; 4, *Artemisia lactiflora*; 5, *Aster novi-belgii* densus; 6, *Helenium autumnale*.—*W. M. C.* 1, *Origanum hybridum*; 2, *Gaultheria Shallon*; 3, *Ceanothus Gloire de Versailles*.—*J. Lisney.* 1, *Picea excelsa*; 2, *Caryopteris Mastacanthus*; 3, *Lespedeza bicolor*; 4, *Phytolacca acinosa*; 5, *Carpinus Betulus*.—*Journeyman.* 1, *Helxine Soleirolii*; 2, *Euonymus radicans*.—*J. C. Quex.* *Phytolacca decandra*.—*F. T.* 1, *Pteris tricolor*; 2, *Pteris argyræa*; 3, *Adiantum formosum*; 4, *Cheilanthes elegans*.—*W. E.* *Ornithogalum lacteum*.—*R. O. Y.* 1, *Odontoglossum blandum*; 2, *Oncidium pubes*; 3, *Maxillaria picta*.—*Advance.* 1, *Dicksonia (Cibotium) Barometz*; 2, *Lastrea trichodes*; 3, *Pteris argyræa*; 4, *Adiantum trapeziforme*; 5, *Adiantum Wilsonii*; 6, *Adiantum Capillus-Veneris magnificum*.

RASPBERRY CANES UNFRUITFUL: *D. H. G.* There is no disease present in the canes, but as the plantation is an old one, it is advisable to plant new canes, selecting, if possible, a fresh site. You could destroy a few of the old rows each year for a season or two.

R.H.S. EXAMINATIONS: *J. C.* The questions set at previous examinations may be obtained from the Secretary, Royal Horticultural Hall, Vincent Square, Westminster, price 2s.

RIDGE CUCUMBERS: *G. L.* The ordinary ridge Cucumbers such as Short Prickly and Stockwood, given the same cultural treatment, never attain to the same length as the ordinary frame varieties, but the varieties King of the Ridge, Long Prickly, Pershore Long Ridge, and Cheltenham Long Ridge would attain to the same length under like cultural treatment as some of the ordinary frame varieties, such as Abbot's Early Prolific and Sion House. All the same, such varieties as Rochford's Market, Butcher's Disease Resister, Telegraph, and Cardiff Castle are much superior both in quality and appearance for growing in frames or pits, as well as being excellent varieties for growing in borders or boxes in glasshouses. The varieties King of the Ridge and Long Green are not, in our opinion, quite so hardy or prolific as the old Prickly Green (Short Prickly). The latter is only inferior to the former in respect to length.

SOIL FROM AN OLD MOAT: *E. R.* It would be better to place the soil in a heap where it could be exposed to the air before using it as a top-dressing for the shrubbery. Your friends were quite right in advising you to mix lime with it, as this will neutralise any acidity, thus sweetening it. But lime is disliked by certain shrubs, including all those of the *Rhododendron* (Ericaceae) family, and it was probably because of this the other authority guarded you against its use. In any case, lime will not injure the other shrubs, and unless it is employed in extravagant quantities, it will not greatly affect the species of Ericaceae.

SOIL INFESTED WITH INSECTS: *M. K. Craddock.* The sample of soil submitted contained a few examples of the common white springtail, *Lipura ambulans*. If the pests occurred in sufficiently large numbers, they may have been the cause of the failure of the crops to which you refer; though it is just possible that some other agent may have assisted in the work of destruction. As a means of prevention, the soil should be roughly ridged, so that it may be exposed thoroughly to the action of frost—as, judging from the sample, it needs such treatment. Give the land a good dressing of lime or lime and soot mixed; if it needs manure, apply some of the artificial fertilisers.

Communications Received.—*W. Garwood*—Spring Hill, A. E. D. G. D. R. W. J. A. S. B. Chloris. *J. M. B. D. K. B. L. J. J. M. J. M. W. W. H.* Divers. *E. M. E. S.* (many thanks). *F. P.*, Oakham. *E. W. K. A.*, Ledford. *F. G. Bothy*. *Anxious W.* Pteris, Dundee. *R. A. M. J. B. F.* *A. P. E. M. W.* *W. P. R. C. T. D. J. D. C. P. M. F. J. C. A. J.* *S. T. P. W. B. R. J. W. A. R. S. J. J. F. C. D.* *H. A. B. W. H. D. J. D. J. W. H. N. R. J. O. B.* The Dover. *H. C. & Sons*. *F. D. R. S. S. F. H. I. T.* *C. P. T. R. P. T. J. L. G.* Brussels. *W. H. W.* *S. H. A. D. C. E. M. J. D. G. C. H. H.*



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AUTUMN-FLOWERING IRISES.

ALTHOUGH a garden that is devoted mainly to Irises can never be as gay in the autumn months as it may reasonably be expected to appear in May and June, there are, nevertheless, a fair number of Irises that can almost certainly be depended upon to bloom in the months between August and Christmas. It is, therefore, not impossible to have some Irises in bloom during every week in the whole year. To obtain this end, it may be necessary to buy each year newly-imported bulbs of *I. alata* and *I. Vartani*, but it is worth some sacrifice to have flowers in the open in the dark days of November and December.

The time at which these two species flower depends to some extent on the weather, but still more on the date at which the bulbs are put into the ground. Sound, well-ripened bulbs, planted early in August, should be in flower by the first week in October, and as *I. alata* generally produces several flowers in succession, the display lasts some time if the weather is not too boisterous or severe.

Iris alata is a native of the western shores of the Mediterranean, being found in Spain,

Morocco, Algeria, Sicily and Italy, and it appears to be largely cultivated in the last-named country for export purposes. As in the case of the other members of the *Juno* group, its fleshy roots are easily broken off from the base of the bulbs, and those bulbs to which few or no roots remain attached can hardly be expected to produce fine or numerous flowers. It seems to do best in a rich, well-drained, if somewhat heavy, soil, in a warm corner which catches the winter sun. Its eastern relative, *palastina*, from Mount Carmel and other parts of Palestine, is very similar, but smaller, and the flowers are usually of a green or yellow colour, though forms have been found that resembled the deep blue of *alata*. For some reason it seems disinclined to flower much before Christmas, but early planting might overcome this difficulty.

The third bulbous *Iris* that may be depended upon to flower before Christmas is *I. Vartani*, which is interesting as coming from the neighbourhood of Nazareth, and as being, therefore, the southernmost representative of the *reticulata* group. Its colour is apt to be a rather poor slaty blue, but it atones for this by giving out the most delicious scent of almonds when the sun shines for a moment upon it.

The difficulty of keeping these three bulbous Irises from year to year lies in the fact that they expect to be able to develop their foliage immediately after flowering, and then go slowly to rest and aestivate during the summer months. Unfortunately, with us their young leaves suffer sadly in the worst months of the year, and it can scarcely be a matter for astonishment that the bulbs are seldom sufficiently ripened to do well in the following year.

So much for the autumn-flowering bulbous species, and, if we had no others, September and October would be usually blank. Fortunately, however, several non-bulbous species seem to bloom at this time with very fair regularity, and I am inclined to think that this is the case not only in the warm, dry Surrey sand, but also in heavier and damper soils.

I. rubro-marginata, a variety of *I. pumila*, from the neighbourhood of Scutari, flowers here regularly in September and October in sunny nooks on the rockery, and, if anything, is more floriferous than at its other flowering season in April. The peculiarity of this plant is that the crimson edge to the leaves and spathes is but slightly marked, if visible at all, except at the flowering season. This character is found again in the form of *I. germanica* from Kharput in Asia Minor, and in another, which was sent to me a year or two ago from Kashmir. In these, too, it is not persistent throughout the year, and scarcely constitutes a sufficient difference to justify a specific name.

Another curiously local *Iris*, namely *I. lacustris*, which appears to be a form of *cristata* and only to be found on the shores of Lakes Huron and Michigan, also flowers regularly at this time, and, with me at any rate, more freely than in spring. Its claim to specific rank is somewhat doubtful, for it differs in no way from *cristata*, except in its diminutive size, and moreover, it possesses in common with that *Iris* a peculiarly characteristic seed, which does not occur in any other

known species. Last year I obtained a few seeds of *lacustris* and a plant that I have already raised from them bids fair to grow to larger dimensions than its parents.

There is one unique plant here, which, with in the diameter of a little more than a foot, has now for the third year in succession produced at this season a sheaf of spikes about 2 feet in height. This year there are at least 15, and each stem bears four or five flowers. It is the solitary product of a cross between a stray flower of a form of *I. Chamæiris* which happened to appear late in June and *I. trojana*. The flowers of the hybrid are intermediate between those of the two parents, being of a rather dull blue purple with a blue beard. In stature, too, the hybrid is a compromise, and, though compromises are never entirely satisfactory, this plant is, nevertheless, a very welcome addition to the *Iris* garden at this time.

Another regular flowerer is a form of the ubiquitous *I. Goldenstaediana*. The flowers are small, of the usual dingy yellow or pale purple, and the plant can hardly claim to be even of botanical interest, the euphemistic term beloved by the compilers of nurserymen's lists.

A prettier plant is a pearly-grey-flowered hybrid of *I. Albertii*, which was raised by Sir Michael Foster, but of which he did not know the pollen parent. This plant is apt to flower at any time, and the blooms show clearly the influence of *I. Albertii* in the curious way in which the heavy veining at the base of the falls ends abruptly at the level of the end of the beard. This is always a marked characteristic of *I. Albertii*, and persists in seedlings, even in two yellow forms of that species that appeared for the first time this year.

This ends the list of the Irises which can be relied upon to produce flowers in autumn, though many others are sometimes so good as to favour us at this time. Last year I remember that the variegata *Gracchus* flowered most freely in October, and this year there are in flower now *I. Milesii* and a hybrid of *Germanica* crossed with *benacensis*, raised by a neighbour, and affording one of the very few instances of hybrids of *Germanica* raised in this country. W. R. Dykes, Charterhouse, Godalming.

ORCHID NOTES AND GLEANINGS.

OSMUNDA REGALIS FIBRE FOR ORCHIDS.

A USEFUL little pamphlet, written by that clever Orchid expert, Mr. H. G. Alexander, relating to the merits and method of using *Osmunda* fibre and *Polypodium* fibre has just been published by Messrs. Wm. Wood & Son, Ltd.

Mr. Alexander, like most other experienced Orchid growers, finds no fault with British Orchid peat when it can be obtained of the proper quality and at a reasonable price, but the scarcity of the article and its great cost renders it imperative that other materials should be tried. After experiments extending over several years, he decided that *Osmunda* fibre was the best material procurable, and for some time it has been used largely in the Westonbirt collection. Some of the strong-growing kinds being potted in *Osmunda* fibre alone. It is pointed out that experimenters must not think that potting in *Osmunda* fibre alone is sufficient to ensure success, for with this as with other potting materials the other essentials of successful Orchid culture must be given careful attention. In order to make the remarks more useful, short notes on

shading, watering, ventilation, &c., and on all the details connected with the preparation, use, and storage of *Osmunda* fibre are given.

CYPRIPEDIUM PRINCESS MARY (NIVEUM × HELEN II.).

In the raising of any new variety, where a desirable character exists in one or the other parent, the problem of the hybridiser is how to retain that character and yet improve the size and form of the flower in the progeny. In the bloom of *C. niveum* the purity of the white ground is an excellent feature, but the flowers are small, and it is a difficult matter to raise large-flowered seedlings from it without sacrificing the pure white ground.

In the variety *Princess Mary* (see fig. 136), this has been obtained and the raisers, Messrs. Sanders & Sons, are to be congratulated. The new variety was awarded a First-class Certificate by the Orchid Committee of the Royal Horticultural Society on October 25. *C. Helen II.*, one

is pale emerald green with purplish spotting on the lower half, and pure white above; the petals and lip are honey-yellow with a pale purple flush and veining. The class to which it belongs is a favourite one with *Cypripedium* specialists, and very desirable for general purposes on account of the long time its handsome flowers last in perfection. The parentage of this hybrid is unknown.

THE ROSARY.

CULTURAL HINTS FOR NOVEMBER.

THE hot weather experienced during September and up to the middle of October has dried the ground, and no attempt at planting should be made until there is a heavy downpour of rain to thoroughly moisten the soil for 2 feet at least below the surface. If the vacant ground is manured and trenched in readiness it will allow

ters of their depth in lines at a few inches apart and 1 foot between the rows; the beds may be made 4 feet wide. The seedling *Briar* is a very useful stock, but it takes three years from the time of sowing to obtain it sufficiently strong for budding. The hips should be gathered when ripe and put into a heap mixed with sand until the fleshy parts rot. The seeds should be sown in drills during March. I should have remarked earlier that the usual distance for planting the stocks intended for budding next summer is from 2 feet to 2 feet 6 inches between the rows and 9 inches between the plants. The distances for the Standard *Briars* have been given already.

Roses of all sections have this year made strong, and, in many instances, superfluous, unripened and crowded growths. These unsatisfactory shoots are best removed at once, so as to give more space, light and air to the remaining branches, which will not only ripen better. Moreover, their removal now will entail less strain on the plant at the March pruning. The pegging down of long, ripened rods of the current season of Hybrid *Perpetual* and hardy *Noisette* Roses can now be undertaken. Bend the shoots carefully down and distribute them at equal distances apart, thinly and within 6 inches of the ground. Secure them in the ground by long, hooked pegs. In this position, varieties that are tender can easily be afforded protection in severe weather by dried Fern or light litter.

Established Roses in pots placed under glass for forcing early will soon be breaking freely. The surface soil in the pots should be stirred frequently to keep it sweet. As the plants advance in growth, a sprinkling of Clay's Fertilizer will prove beneficial. A start may be made with those of the Tea section, by placing them at the warmest end of the house. For the present, a temperature of 50° should not be exceeded, permitting a little top ventilation for a few hours in the daytime during favourable weather; at other times a little fresh air may be admitted through the bottom ventilators near the hot-water pipes. Well vaporise or fumigate the plants directly they are brought into the house. A light syringing overhead may be given in the mornings of bright days, damping down occasionally at other times to maintain a humid atmosphere. On the first appearance of mildew, it must be promptly checked by painting the hot-water pipes with a solution of soft soap and "sulphur vivum." Plants potted in October should remain outside plunged in ashes until the end of December.

GRAFTING UNDER GLASS.

The middle of November is the usual time for grafting Roses under glass, but the sap being unusually active, and the growth later this season, the operation may be deferred until the end of the month. Late spring-potted, well-established *Briar* and *Manetti* stocks are the best and most reliable for the purpose, but if such are not available, grafting must be delayed until the freshly-potted stocks are fairly established. Movable glass frames on slate benches covered with fine ashes immediately over two 4-inch hot-water pipes and placed in the front of a light, span-roofed house should be employed. There should be a clear head space in the frame of from 10 inches to 15 inches. The growth of the stock should be in advance of that of the scion, the graft and stock to be as nearly as possible of equal girth. Graft in the usual manner and bind the stock and scion together with soft bast or yarn and brush some grafting wax over the union. The graft should be of firm wood, and not taken from the top of a shoot. A temperature of 50° is high enough for a start, keeping the frames closed a week after grafting; if there is too much condensed moisture, the sashes may be kept open for an hour or two each morning. When a union is effected, increased heat, with a little fresh air, may be afforded until growth is well developed, when the plants can be removed from the frames altogether. Careful watering in all stages is an absolute necessity, and moisture must be

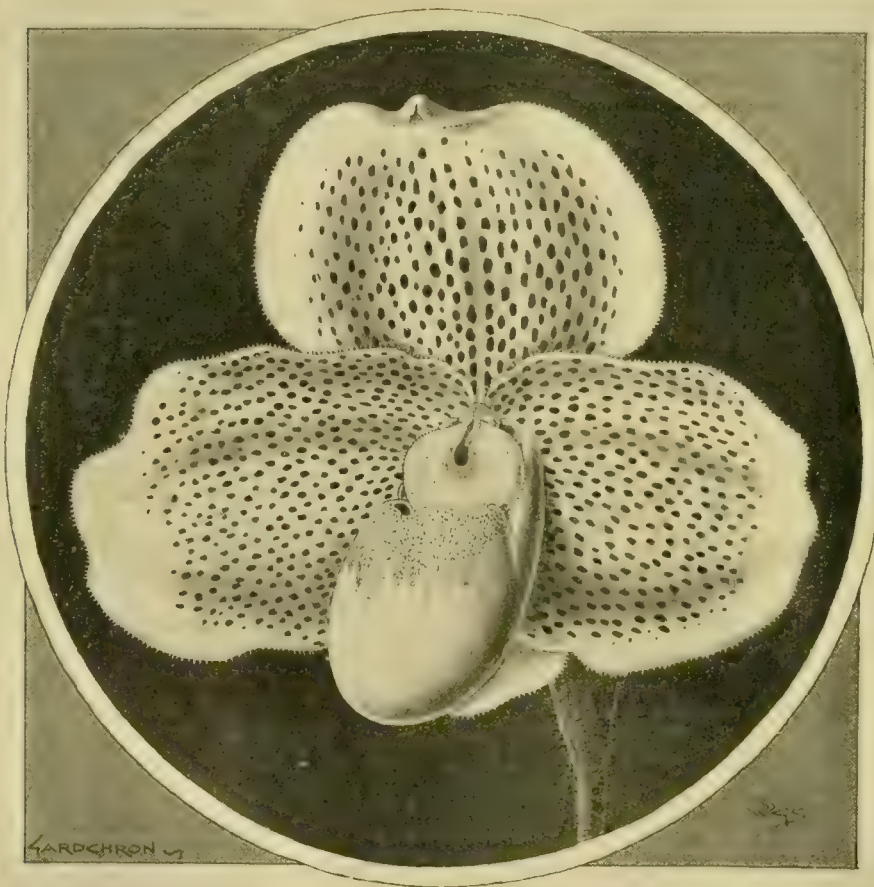


FIG. 136.—CYPRIPEDIUM "PRINCESS MARY": FLOWER WHITE, WITH VIOLET-PURPLE SPOTS.
(R.H.S. First-Class Certificate, October 25.)

of the parents of the new hybrid, was obtained by crossing *C. bellatulum* and *C. insigne Chantini*, both of which have flowers with decided colours, from which *C. Helen II.*, in its many varieties, derives its more or less yellow tint. When crossed with *C. niveum*, however, the cloudy colours vanish, and the pretty, clear-white flower of *Princess Mary*, with bright violet-purple spotting, is the result.

CYPRIPEDIUM × BRITANNIA.

THE illustration (fig. 137) represents a flower of this handsome *Cypripedium*, which was raised by Messrs. Sanders & Sons, who obtained an Award of Merit for it at the Royal Horticultural Society's meeting on October 25 last. Reference to Mr. Worthington Smith's illustration will show that it is an excellent production of the *C. Aeson giganteum* class, with a peculiar arching forward of the dorsal sepal. This sepal

the rain to penetrate the soil, which will then be easier to work. If the selection of Standard *Briars* has been made, the planting can be completed as soon as the conditions are suitable. These can be followed by the *Manetti*, *De la Griffera* and seedling *Briars*. The two former stocks may be planted firmly to half their depth, and the seedling *Briars* right up to the collar of the plant. These can all be budded next year. Rooted *Briar* cuttings also make useful stocks for budding after the second year. All the above stocks have their growths cut back before being planted. The best of the shoots from the strongest plants form good material for making cuttings wherefrom to raise other stocks to follow on as required. Cuttings can also be obtained from the tops of the plants budded last year. The cuttings should be about 9 inches long, they should be disbudded to within three or four eyes of the top and planted three quar-

afforded only when the plants are dry. The Tea-scented, Hybrid Tea and Noisette Roses take more kindly to the Briar and the De la Griffere stocks, whilst the Hybrid Perpetual and Bourbon varieties do best on the Manetti stock as dwarfs.

All pot Roses raised during last autumn and spring and plunged outside, may now be brought into a cool house to ripen off their growths. They should be kept somewhat dry at the roots for the present. *J. D. G.*

NOTICES OF BOOKS.

ROOT AND STEM VEGETABLES.*

THIS volume is not the least useful in Mr. Hooper Pearson's series of "Present-day Gardening," nor is it lacking in attractiveness. The author is one of the oldest, yet one of the most active of present-day horticulturists. Though what may be termed an all-round practitioner, Mr. Dean has given special attention to vegetables, their cultivation and exhibition, whilst a more competent judge of these products it would be most difficult to find. Moreover, though he is no stranger to the spade, he is not less expert in the use of the pen, and he expresses what he has to say in a pleasant, readable manner.

After making brief historical reference to the cultivation of vegetables, the author goes on to say that at the commencement of the nineteenth century the kinds of vegetables were nearly as numerous as they are to-day, but the varieties were few and lacking in merit as compared with modern sorts. Still, he says, "there are new sorts every year that, with superior culture, excel all previous forms, and this will be the case as long as gardening is practised. We cannot stand still: if we do not progress, we shall retrogress. That condition must never arise: vegetables are the best and purest of food, therefore economic necessity will always secure their cultivation.

After a serviceable chapter on the preparation of the land, the subject of enriching the soil with natural, artificial, and green manures is dealt with in a clear, yet concise manner. Then follow cultural details for the various kinds of root and stem vegetables.

The small chapter on Shallots is perhaps a little out of place, since these bulbs are so closely allied with Onions; beside, the bulbs illustrated are not the small, true Shallot (*Allium ascalonicum*), but the Jersey or false Shallot (see *The Vegetable Garden*, Robinson and Barron, p. 523). The true Shallot seldom produces seed, and should be exhibited in clusters, three to a dish: the large or false Shallots in 24 individual bulbs (see R.H.S. Rules for Judging).

Root and Stem Vegetables is beautifully illustrated by eight coloured plates from photographs, in which 33 varieties of vegetables are admirably represented. It is a volume that should find its way into the hands of all young and old gardeners, cottagers, and allotment holders in the kingdom. *J. Wright, V.M.H.*

GARDENING IN THE TROPICS.†

MR. MACMILLAN, Curator of the Royal Botanic Gardens, Peradeniya, Ceylon, has rendered a signal service to tropical horticulture in writing this excellent, comprehensive treatise on tropical gardening and planting. As Sir William Thistelton Dyer has well said, "Agriculture in the tropics is essentially extended gardening: it has little relation to the agriculture of temperate countries, and its methods are those of horticulture." It is from this standpoint, as he indicates in the preface, that Mr. Macmillan has attacked the problem of providing a manual which shall

be of service to planters living in tropical countries, both in aiding them in their commercial horticultural undertakings and in the efforts, which are apt at times to be sporadic, toward beautifying the surroundings of their bungalows.

Inasmuch as planters are often men who have had no horticultural training, and also because horticultural methods suitable for the tropics are not always those in vogue in temperate regions, Mr. Macmillan has done well to deal in his opening chapters with the principles of horticulture. After an excellent account of climate and soil and their relations with plant-life, chapters are devoted to manures, soil operations (including irrigation), propagation, cultural operations, and garden planning. The chapters which follow are devoted to the subject of fruit cultivation, and contain excellent accounts and illustrations of the

habit of various introduced trees induced by change of climate; thus, as Mr. Macmillan remarks, the Pear is practically an evergreen, and the same is true, we believe, of the Cherry.

Having dealt with fruits, the author proceeds to give an account of the vegetable and food-crops, spices, and condiments which are grown in Ceylon. It is interesting to find that far more European vegetables are cultivated now than formerly, if the present writer's memory serves him. Fifteen or twenty years ago vegetables, such as Cabbage and Celery which, according to Mr. Macmillan, grow very well in the hills, were rare or unknown.

A considerable portion of Mr. Macmillan's book is devoted—as should be the case—to trees, and a special chapter is set apart for the important subject of shade-trees. Needless to say, adequate space is given to the most important crops of



FIG. 137.—CYRTOPODIUM "BRITANNIA," EXHIBITED BY MESSRS. SANDER AND SON.

(R.H.S. Award of Merit, October 25)

chief tropical, sub-tropical, and temperate fruits which may be cultivated in different parts of the island of Ceylon; for, as visitors to that green island know, it contains a wide range of climate, and hence is capable of supporting not only tropical but also temperate forms of plant-life. The writer of this notice recalls with pleasure some weeks spent at Hakgala in enjoyment of the kindly and generous hospitality of the late curator, Mr. Nock, and was privileged to taste Strawberries grown at that hill-station. On the subject of introduced fruits, the home-keeping reader will find much that is of interest in this volume; thus the Cherry grows well but fails to blossom; the Plum produces fairly heavy crops in the neighbourhood of Nuwara Eliya, though the fruits rarely ripen owing to the advent of the monsoon rains. Equally interesting in the change

Ceylon; namely, Tea (the area of cultivation of which is 395,000 acres and the yield 186 million pounds), Cocoa (24,000 acres), Coconut Palm, Rice) cultivated by the natives and yielding 4½ million bushels annually), and rubber, the export of which (counting only Para rubber) has increased in value from £859 in 1900 to over £480,000 in 1909.

To give an adequate account of the rich and varied contents of this volume is, however, beyond the limits of our pages. To the traveller who knows the wonderful vegetation of Ceylon, the turning of these pages recalls in vivid fashion the sight of majestic trees and vast climbing plants embracing them; the slim Coconut trees with their feathery crowns of foliage, the brilliant red foliage of *Amherstia nobilis* (a plant introduced from Malaya), the great, pew-like buttresses

* *Root and Stem Vegetables*, by Alex. Dean, V.M.H. (Present-day Gardening Series). (T. C. and E. C. Jack.) Price 1s. 6d. nett.

† A handbook of Tropical Gardening and Planting with special reference to Ceylon, by H. F. Macmillan. Published by H. W. Cave & Co., Colombo, 1910, pp. 524, illustrated. Price 7s. 6d.

of the roots of *Ficus elastica*, and a hundred other sights at once commonplace and marvellous. More than this, however, do these pages recall, namely, the fact that they represent a fine record of progress. Instead of the careless attitude of some decades ago, there is in Ceylon particularly, and also in other crown colonies, an official carefulness with respect to horticulture. In this change of attitude which must mean much for tropical agriculture, Ceylon has borne an honourable part in the foremost rank. The volume under review testifies not only to the fertility of Ceylon, but to the fertility of resource displayed by the Director and his colleagues of the Royal Botanic Gardens. In future editions of this book it might be well to include a brief historical account of the development of agriculture in Ceylon, and at the same time to remedy the only important omission we have noted, namely that of an index.

SCOTLAND.

THE EDINBURGH ROCK-GARDEN IN AUTUMN.

DURING a visit to the rockery at the Royal Botanical Gardens, Edinburgh, in October, I made a few notes of some of the plants and shrubs in flower there, in the hope that they might prove of interest to those who possess a small or large rockery, and who may wish to add to their store of treasures.

It must always be a source of keen enjoyment to visit this rock-garden at Edinburgh, so well known for its beauty and interest. The enormous blocks of granite and of sandstone are so cleverly placed, and the little paths wind about so cunningly, that many times one feels that here is the untrammelled home of nature, and that one is on some beautiful mountain-side, which has been untouched by the hand of man. This illusion is wonderfully carried out, considering how small an area of ground is occupied by the rock-garden; and the number and variety of rare plants to be found there are little short of marvellous.

On the day of my visit, I entered the rockery at a somewhat low-lying and shaded corner, and here I found a large mass of *Veronica Teneurum* var. *dubia* (bright blue) in bloom; whilst not far from it the bright-yellow flowers of *Linum campanulatum* showed up well on their erect stems some 12 inches to 14 inches high. Just above, and covering a miniature mountain-top, was a large patch of *Daboecia polifolia atro-purpureum*, a most beautiful shrub of the Heath order, which was bearing numerous large, purplish-red bells. In other parts of the garden I noted the type and the white variety, and all are highly ornamental. In a low-lying, shady situation, the rich, violet-blue flowers of *Viola heterophylla* provided a good display of colour; while in another part of the garden *V. lutea* was an equally effective patch of bright yellow.

Perhaps the most striking feature was a cluster of some 25 plants of *Yucca filamentosa*, situated on a dry ridge, where they stood out boldly against the sky. This is an elegant and graceful kind, some 3 feet to 4 feet high, each slender spike bearing numerous white bells, which are set some distance apart.

Following one of the little paths upward, I passed *Arenaria montana* var. *grandiflora* (white), in full flower; *Cistus allyssoides* was a sheet of yellow; and also in bloom were *Lithospermum prostratum* (blue), *Potentilla Tonguei* (flame-orange), *Hypericum aureum* (yellow), and *Chrysopsis villosa* var. *Rutteri* (yellow). This last-named is to be commended for its showiness, but is of a rather coarse and weed-like appearance. Next to it were two species of *Achillea*, both having white flowers, *A. Thomasiana* being 15 inches high, and *A. Clavennæ* about 9 inches, with silvery leaves, and of a much neater habit. Near them was *Scabiosa graminifolia* (pale mauve), and higher up, in a shaded position, grew *Androsace lanuginosa*, which had been blooming

since early July. On the same exposed peak were some plants of *Polygala Chamæbuxus*, a neat sub-shrub, about 6 inches high, and covered with yellow-tipped purple flowers. On the summit of this miniature mountain was a fine patch of *Spiræa callosa rubra*, in full bloom, and presenting a very gay and striking appearance; while near it was creeping *Antirrhinum sempervirens*, with pale-yellow tinged pink flowers. Another species, *A. Asarina*, which is more handsome, with large, yellow flowers, I found creeping under an overhanging block of sandstone in the newer part of the rockery.

Another mountain peak further along is the home of various members of the *Campanula* family. They had mostly finished blooming, but there were still flowers on *C. rotundifolia*, *C. Hendersonii*, *C. garganica* var. *hirsuta*, and a few on one or two others. On a high ledge I found *Dianthus armeria* var. *roseus* blooming

blooming profusely. These were *P. affine* (pale salmon-red, 9 inches high, and a perfect sheet of colour), *P. capitatum* (a creeping species, only 2 inches or 3 inches high, with prettily-marked leaves and pinky white flowers), and a species 12 inches to 14 inches high with vivid rose-coloured flowers. The two last have been in bloom since July. *Geum tyrolense* (bright yellow) was looking well, and *Campanula pusilla* and its white variety were both out; while *Acana microphylla* had formed a pleasing carpet of minute, bronze-coloured leaves. In a more sunny position, *Pentstemon heterophyllus* was still producing many of its gay, magenta and blue flowers; while a New Zealand plant, *Craspedia uniflora*, had two of its yellow, pincushion-like flowers left in bloom. These are borne singly at the end of each stiff, upright stem, some 12 inches high; it is a rare plant, more curious than lovely.

The only member of the *Aster* family which I saw in flower was *A. Lynosyris*, but, for those



FIG. 138.—COLLECTION OF VEGETABLES SHOWN BY HON. VICARY GIBBS. AWARDED THE "SUTTON" CHALLENGE CUP AT THE R.H.S. MEETING ON OCTOBER 25.

(See p. 320 ante.)

away as gaily as when I first saw it in July, and I was again struck by the vividness of its flame-pink colour. It is a most desirable little plant, and, apparently, as hardy as it is beautiful. The same might, perhaps, be said of *Potentilla nepalensis*, which I also saw still in flower from July, and which is also of a peculiarly vivid shade of pink.

In a sheltered, dry, and sunny nook lower down, *Oenothera macrocarpa* seemed thoroughly at home, and was opening numerous handsome, yellow flowers to the sun; while near by was a large colony of *Veronica Bidwillii*, a dwarf species, with small, white flowers. In a high but sheltered nook grew *Anaphalis japonica*, an uncommon, silvery-leaved plant, producing a single upright stem, about 10 inches high, terminated by a cluster of small, white flowers.

There is one part of this rock-garden which is very shaded and somewhat draughty, and I was curious to see what grew there. Three species of *Polygonum* seemed most flourishing, and were

who like them, there were many dwarf kinds suitable for a rockery, which would bloom at this time of year, such as *A. ericoides*, *hyssopifolius*, *horizontalis*, *Thomsonii*, and others.

I must also allude briefly to some of the dwarf coniferous trees and evergreen shrubs which were planted with good effect. Of the former class, especially noteworthy were *Juniperus nana*, *J. communis procumbens*, *Picea excelsa repens*, *Abies concolor*, and *Podocarpus alpina*, none of which exceeded 18 inches in height. Of the evergreen shrubs, *Berberis stenophylla* var. *Irwinii* was also about the same height, and looked pretty, covering a group of rocks. *Euonymus radicans variegata* is too well known to need description; while *Cotoneaster horizontalis* had covered a large surface, and the low, spreading branches had formed an impenetrable bank of dark, shining, green leaves and scarlet berries. *Leiophyllum buxifolium* is a tiny shrub of the Heath order, and it still had a few white flowers left on it. *M. E. Stebbins*.

SOUTH AFRICA.

NOTE FROM JOHANNESBURG.

WRITING from Johannesburg on September 11, the veteran florist, Mr. James Hall, says:—Our weather since September came in until the 8th was bitterly cold, but on the 8th we got our first spring rain (early this year), and since then it has been much warmer. The rain rapidly changed the whole aspect of the country: the grass, which had not received any rains for four months, and had become quite brown, is rapidly changing to green. The natural grass is called sweet grass. It is the same as that known as Couch, or Spear grass in the old country: the farmers here consider it the best for feeding sheep and cattle, and it also makes the best lawns and bowling greens.

I noticed in the *Gardeners' Chronicle*, August 6, p. 105, Mr. Gardner's praise of the perpetual-flowering Carnation for the open ground. I can endorse all that the writer says in praise of these Carnations. I saw plants doing well in a friend's garden, and obtained and planted a good batch about this time last year. They soon began to flower, and have been flowering ever since without intermission, and have still plenty of buds. They bloomed all through our winter, although we had some sharp frosts and very trying weather which affected most of the other flowers, Marguerites, both white and yellow-flowered, being killed. I also read in the *Gardener's Chronicle* for August 20, p. 137, the note on Roses on their own roots. Here, too, I am entirely in agreement with the writer. I may say that the whole of my Roses are on their own roots, and they give entire satisfaction, whereas those grafted on stocks in other gardens are unsatisfactory. I may mention, however, an exception. Some 12 years ago I wanted to increase my stock of Marsechal Niel. I had no Briar stocks on hand, but fortunately I had some strong-rooted cuttings of the yellow Banksian Rose, and, noticing the clean growth and vigour of these, I used them as stocks with great success. I also tried it for grafting other Teas, and it is certainly the best stock out here, for it never throws up suckers. I have between 5,000 and 6,000 Rose cuttings, most of them well rooted, this year, and some of the strongest roots will be in bloom at Christmas and January in the open ground without shade or shelter of any kind.

FLOWER BORDER.

VERBASCUM PHLOMOIDES ALBUM.

I WAS much struck with the conspicuous and uncommon beauty of this fine hardy border plant when I saw it for the first time at the last Temple Flower Show, where it was shown by Messrs. Gibson, of Leeming Bar, Yorks. I obtained a plant, now in flower in my garden, with which I am even more pleased than when I saw it at the show. Its individual flowers are of large size and of a beautiful shade of creamy-white, with conspicuous yellow anthers. The blooms are very thickly placed on the stem, which has also several lateral or subsidiary branches, promising a long continuance of bloom unless checked by frost, with which, however, we are not much troubled on this usually mild and moist Irish sea border. The plant is properly a biennial, flowering in its second year from seed, and then dying. This, however, is not invariably the case, as Messrs. Gibson inform me that in their nursery several plants, which flowered last year, are again blooming finely this season. This beautiful albino does not, unfortunately, reproduce itself true from seed, a large number of the seedlings producing yellow flowers with only a few white ones. W. E. Gumbleton.

BRITISH AND IRISH HEATHS.

ONE or two small points arise in connection with B.'s note in *Gard. Chron.*, p. 245, on "British Heaths in the Garden," but I am quite with him and with Mr. Wm. Robinson in suggesting in *The English Flower Garden* that "we should take more hints from our own wild plants and bring the hardy Heaths of Britain into the garden."

Erica ciliaris is one of the most beautiful of small shrubs. It is easily grown, and flowers not only in June and July, as B. says, but right on into October. During the last week of September it was a glorious sight on one of the undulating Dorset moors, and the rich-brown, faded flowers are as handsome on a sunny autumn day as the almost crimson blossoms are. It grows sometimes mixed with *E. tetralix*, with which it freely hybridises, and in drier places with *E. cinerea* and *Calluna*. Though "a dry situation" may suit it in the garden, in Dorset it prefers the damper parts of sandy heaths with *E. tetralix* and *Gentiana Pneumonanthe*. In fact, several times during the recent dry September

The hybrid *ciliaris* × *tetralix* (*Watsonii*, Benth.) is also well worth cultivating, if it can be procured or raised artificially. It may be a distinctly English hybrid, for I see no notice of it in any Continental flora I have consulted. It is generally smaller in stature than *ciliaris*, and the wiry stems cannot so easily be pulled up from the root-stock, in which respect also it resembles *tetralix*; but the foliage of what I saw in Dorset has more of the pretty *ciliaris* character about it. The flowers are longer than those of *tetralix*, but they do not have the protruding deflexed style of the other parent, nor are they so urn-shaped. The colour of the hybrid plants I have observed is generally a pale pink, but with less of the waxy appearance of *tetralix*.

E. tetralix is such an exquisite plant and so variable in colour, from white to a deep flush of rose, that it is surprising it is not more often seen in gardens, and especially as it grows less rank and shrubby than many Heaths. In Germany *E. cinerea* is only found in one place, above Bonne, and in Switzerland the only Heaths, besides the Ling, are *E. carnea*, which prefers stony, mountain woods on limestone, and *E.*



FIG. 139.—PORTION OF MESSRS. VEITCH'S GROUP OF CHOICE STOVE AND GREENHOUSE PLANTS EXHIBITED AT THE R.H.S. MEETING ON OCTOBER 25.

(See p. 318 ante.)

have I seen it flourishing in very wet, peaty soil, interspersed with Sphagnums of the richest greens, yellows, browns and reds, with Gentian and the brilliant, orange-red fruiting-spikes of *Narthecium ossifragum*, a combination which, even without the Sphagnums, would be charming if introduced into the bog-garden, and particularly in autumn. A mixture of peat and sand would suit it best, as, indeed, it suits most of the European Heaths. It is astonishing how much water is absorbed by Heaths, both growing and when cut and placed in a vase. In the west of France and in Spain and Portugal this Heath is found in suny woods as well as on heaths. The tendency on the Continent is for Heaths to grow in sandy woods and thickets more than they do in the British Isles. This not only applies to *E. ciliaris*, but to *E. vagans*, and, to a greater extent than in Britain, it applies to *E. cinerea* and *Calluna*. *E. mediterranea*, however, seems to be found only on damp heaths abroad, just as it is in Mayo and Galway.

Possibly too much is made in books of the one-sided or unilateral inflorescence of *E. ciliaris*, for I notice this feature is by no means universal.

vagans, which is rare. This fact probably accounted for a display of *E. tetralix* "rosea" (the ordinary pink form) at the Geneva International Horticultural Exhibition about a year ago.

The position given to *E. Mackayi* in B.'s note is unfortunate, for in the same paragraph with *E. mediterranea* we are told: "The only other British species is Mackay's Heath (*E. Mackayi*), which is regarded as a sub-species, and is found only in Co. Galway." It is a pity this sentence was not placed after *E. tetralix*, of which species Mackay's Heath is sometimes called a variety, though most of the modern writers, except Williams, rank it as a species. Lloyd Praeger says the "habit recalling that of *E. tetralix*, among which it grows, and from which it is at once picked out by the broader, ciliate leaves and the flowers rose coloured on the sunny side, almost white on the other." A double-flowered form, found in Galway by the late F. C. Crawford, has been named by nurserymen *E. Crawfordii*, but the description has not been published, and the name may be allowed to drop. Elsewhere *E. Mackayi* has been found only in the mountains of Castile and Asturia.

E. Mackayi × *mediterranea* (*E. Stuartii*, Linton) was first considered a variety of *E. tetralix*, but has recently been described as a hybrid between the two local Heaths named above. It was found very sparingly in W. Galway in 1890 with *E. Mackayi*, the nearest habitat of *E. mediterranea* being 2½ miles southward.

It is a noteworthy fact that, according to Keller and Schinz, no fewer than 9 of the 13 Swiss plants belonging to *Ericaceæ* have been seen in that country up to 2,400 metres (7,870 feet), and three reach 3,000 metres.

The uses to which Heath is put in various countries are interesting. For example, in the south of France, as at Cogolin in the Var, the roots of *E. arborea* are converted into "briar" pipes, the word, of course, being a corruption of the French *Bruyère*. In the neighbourhood of Poole, Dorset, hundreds of cartloads of Heath are used in the making of new roads, for an 8-inch bed of Heath is strewn on the foundation of the road before an upper stratum of gravel and flints is added. This, I understand, tends to mat the whole together into a firm, compressed mass when the steam roller has done its work. At any rate, Heath forms a cheap road metal in this district, and one of the finest roads near Poole has just been made in this manner.

Having alluded to *Gentiana Pneumonanthe* growing in company with *Erica ciliaris*, I might mention that I recently found in Dorset a white specimen of *G. Pneumonanthe*, which had the usual green (but very pale) markings. It is now in the Herbarium at the British Museum. In the Alps, albino forms of blue *Gentians* are very rare, but it is not infrequent to find lilac or violet forms of *G. nivalis* and *G. verna*. Once, in June, 1908, in the Mont Blanc chain, I came upon a large area of *G. bavarica* with violet flowers growing with the blue ones. Prof. Schinz informed me the species had never been recorded that colour before. *H. Stuart Thompson.*

The Week's Work.

FRUITS UNDER GLASS.

By B. GOODACRE, Gardener to Sir L. ERNEST CASSELL, G.C.B., Moulton Paddocks, Newmarket.

Tree planting.—The present month is suitable for planting under glass such fruit trees as Peaches, Cherries, Plums, and Pears. Where any alteration of existing arrangements is contemplated, or new houses have been put up, the work should be taken in hand without delay.

Peaches and Nectarines.—The border should be well drained, and consist mainly of fibrous loam, with a good proportion of lime, in the shape of old mortar rubble. In order to get the trellis covered and to provide a crop as early as possible, extra trees may be planted between those which are intended to ultimately furnish the space. These extra trees will be lifted in the course of a few years or whenever they begin to crowd their neighbours. When planting walls, standard and dwarf trees may be placed alternately. Make holes large enough to allow the roots to be spread straight out to the tips, and keep the roots well up towards the surface of the border. Allow the soil a few weeks to settle before tying the trees permanently to the trellis. Twelve good varieties of Peaches in their order of ripening are as follow:—Waterloo, Duke of York, Early Alexander, Hale's Early, Diamond, Royal George, Violet Hative, Stirling Castle, Noblesse, Prince of Wales, Sea Eagle, and Nectarine Peach. Good varieties of Nectarines are Cardinal, Early Rivers, Précoce de Cronsels, Lord Napier, Rivers's Orange, Elruge, Pineapple, and Victoria. These are also given in their order of ripening.

Cherries.—Particular attention should be paid to drainage when preparing borders for Cherries under glass, as they soon resent the least approach to sourness of the soil resulting from water-logged borders. Like other stone fruits, they require a fair proportion of lime in the compost. The soil should be comparatively dry when planting, in order that it can be made thoroughly firm. Good varieties for cultivation indoors are: May Duke, Bigarreau de Schreken, Governor Wood, Elton, Noble, and Bigarreau

Napoleon. The names are given in the order of ripening.

Plums.—When grown as cordons in wall cases or lean-to houses, Plums are not only useful in providing fruit in advance of that which ripens out-of-doors, but, being independent of climatic conditions, they may be relied on to produce crops when those outside are destroyed by spring frosts or other causes. Varieties which succeed in this manner are as follow, the names being given as they ripen: Czar, Brandy Gage, Early Green Gage, Le Montfort, July Green Gage, Kirke's Transparent Gage, Jefferson, and Prince Englebert.

Figs.—Fig trees fruit best when the roots are confined to small borders. These should be composed of rather poor, gritty soil, not necessarily soil of poor quality, but such as contains little manurial substance which tends to promote rank unfruitful growth. Liberal additions of old mortar rubble, and broken bricks should be made to the compost as the Fig roots revel in such material. The border should also be raised a few inches above the level. This will allow the water to pass away freely from the roots, and will also tend to keep the border warm and free from excessive wet. Varieties of Figs are fairly numerous, but only a few are of general utility, namely Brown Turkey, White Marseilles, Brunswick, and Negro Largo.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Bedford, Surrey.

Mexican House.—This division is usually devoted to those plants needing much direct sunshine at all seasons of the year. The principal species of Mexican *Lælia*s are *L. albida*, *L. autumnalis*, *L. Marriottiana*, *L. Gouldiana*, *L. purpurea*, *L. anceps* and its varieties; in addition there may be found in this house such hybrids as *L. amœna*, *L. Nemesis*, and *Lælio-Cattleya Winkleyi*. At the present time many of these plants are developing their flower spikes, and care should be taken that none of these is allowed to get so near the roof glass as to suffer injury from cold. In lower-ried houses, where the head room is insufficient for the spikes to develop naturally, they should be carefully tied down to neat sticks, training them in that direction where there is most light and sunshine. Carefully examine the plants at night, and after each watering, for woodlice, which cause much damage to the young roots. During the flowering season the plants need only sufficient water to keep the roots moist, and afterwards still less will suffice until growth recommences. A warm, sunny corner of this house is a suitable position for *Vanda teres*. There is nothing in the formation of the growth to indicate the beginning of the resting season, but, generally speaking, the plants have made sufficient growth by this time, therefore, less moisture is needed than they have been given hitherto, but they should not be kept so dry as to cause the stems to shrivel. If afforded a light spraying overhead on warm, sunny days, they will keep plump, and bloom profusely. The different species of *Barkeria*, now placed as synonymous with *Epidendrum*, as *B. elegans*, *B. spectabilis*, *B. cyclotella*, *B. Lindleyana*, and *B. Skinneri*, are difficult to cultivate for long together. These plants thrive best when suspended to the roof in shallow pans with *Osmunda* fibre to root into, giving them plenty of water during the growing season, and treating them afterwards as advised for other Mexican species. The warm-growing *Odontoglossum citrosimum* generally thrives very well suspended to the roof of this house, but now that the plants are completing their growth, they will benefit from a slightly warmer and more genial atmosphere for another month, still affording them plenty of water at the root till growth is completed. The Mexican house should be ventilated well on all favourable occasions, especially at night, and but very little damping down will be necessary unless there is much sun heat or extra fire heat has to be used.

Dendrobium.—*D. thrysiflorum*, *D. densiflorum*, *D. Griffithianum*, *D. Farmeri*, *D. suavisimum*, *D. chrysotum* have finished their growths, and should be placed in a cool, intermediate temperature. Afford them just sufficient water to keep the leaves fresh, and the pseudobulbs from shrivelling. Sponge the under sides of the leaves occasionally to prevent red spider.

Lælia harpophylla.—Plants of this light, orange-red flowered *Lælia* should be removed to a light position in the Cattleya house, and afforded plenty of water at the root only until the flowers open, when the plants should be returned to a dry shelf in the cool intermediate house.

Odontoglossum.—Such plants as *O. grande* and *O. Schlieperianum*, that have recently bloomed, should be placed on a dry shelf in the cool house, where they will rest. *O. Insckayi*, and its varieties *leopardinum* and *splendens*, need a similar position, but as they are now producing their flower-spikes, they require copious waterings. When the flowers fade, afford them a period of rest with *O. grande*. Owing to the partiality of slugs for the flower-spikes of this species, the plants should be isolated, by standing them on inverted pots placed in pans of water, or a ring of wadding may be placed around the base of each flower-spike.

PLANTS UNDER GLASS.

By JOHN DUNOGHUE, Gardener to JOSEPH PICKERSGILL, Esq., Barton Hill, Weetwood, Yorkshire.

Chrysanthemums for exhibition.—By this date *Chrysanthemums* for exhibition will have reached a most interesting stage, and cultivators will be able to make a selection of the most meritorious varieties. I prefer to cut the blooms early in the morning a day or so previous to the show. A selection of the best flowers cannot be made in a few moments; it requires time. The necessary numbers of varieties must be borne in mind, and the flowers must be cut with about a foot of stem and the name of each variety correctly retained and secured safely to each flower. The labels will be needed for future reference should the flowers be staged, as is often the case, by artificial light, which has a curious effect upon some of the colours. Another important item to be kept in view is that the show boards are nicely enamelled a dark-green colour, which will show up the flowers to advantage. The boxes will need cleansing thoroughly, so that the flowers will not get dusty during their journey to the exhibition. The flowers are best arranged in their positions and the names attached during the afternoon prior to the show, in order to avoid confusion at the exhibition. The colours must be blended as nicely as possible. Some excellent growers advise the smaller flowers to be arranged along the front of the boards, but the first impressions of judges are often the most forcible, and I recommend the smaller blooms to be kept out of sight as much as possible. The blooms in the back row should be raised from 9 inches to a foot clear of the boards and the centre raised accordingly, while the florets of the front row may remain just clear of the boards. Whilst the exhibitor with the best blooms generally succeeds, it must also be remembered that every judge admires good staging, and, all else being equal, it certainly is a point or two in favour of a particular exhibit. Cupping up of the Japanese varieties is of a simple nature, except that they ought not to be cupped too tightly, or the depth of bloom suffers in consequence. In regard to incurred blooms, much dressing of the florets is sometimes required, and extreme care is required to get the cup into the proper position. The brushing of petals should be persevered in as long as time permits, so as to present the exhibit at its best in time for the judges to make their decision.

Cyclamen.—If these plants are required in large quantities, let a second sowing be made at the present time. The seedlings may remain undisturbed in their seed-pans until the turn of the year, at which time they may be transferred into single pots and kept growing steadily throughout the spring. The earliest batch of last season seedlings are now almost at their best, and are producing an excellent display of bloom. In order to prolong the flowering season, attend carefully to the watering, and apply top dressings of an approved chemical fertiliser or applications of diluted farm-yard liquid.

Shading.—The shading may now be removed from the plant-houses, with few exceptions, as the sun's influence upon plants at this season is of great value. Select a dry day for removing the materials, and store them away in as dry a condition as possible.

THE KITCHEN GARDEN.

By JOHN DENN, Kitchen Garden Foreman,
Royal Gardens, Windsor.

Potatoes.—Tubers that were lifted a month ago and stored temporarily should be examined and sorted as soon as possible. Any that are to be stored till late in spring may be placed in pits and covered with a 6-inch layer of straw, over which a covering of soil must be placed to the depth of 8 or 9 inches. This will afford sufficient protection until severe frosts are experienced, when some other covering must be applied to render the tubers quite safe from frost. This last covering should be removed when danger from frost is over. While the tubers are being sorted, select those intended for next season's planting, and place them in single layers on shelves in some frost-proof store, where ventilation can be freely afforded in mild weather. Potato "sets" treated in this manner will give better results than those left in a heap until the spring, as, in the latter case, spindly growths will result.

Lettuce.—Lettuces planted late in the season in the open garden should be lifted now with good balls of soil and transplanted carefully into frames. Following this, a good watering should be given them to settle the soil about the roots, so that the plants may re-establish themselves as soon as possible. After a few days, the lights should be removed and the soil between the rows stirred with a small hoe. The present is a good time to sow Lettuce seed in a cold pit for planting out in early spring. If the bed is made up to within 1 foot of the glass, strong plants should be ready for planting on a south border by the end of February if the weather is favourable. As soon as the young plants appear, air must be given freely, to keep them stocky. Hardy White Cos and Standstead Park are good sorts for this sowing.

Mushrooms.—Horse droppings should be collected and placed in open sheds, where they can be turned frequently in preparation for making successional beds. It is necessary to turn these droppings five or six times, to allow the escape of gases, previous to their removal to the Mushroom house. The turning should be repeated after the droppings have been placed on the shelves, until all danger of sourness is over. When the temperature is still declining, the whole surface of the bed should be covered with sifted maiden loam to the depth of 1 inch, and made tight by beating with the back of a spade. The soil for this purpose should be placed in the Mushroom house at least 24 hours before it is required for use, so that it may become nearly the same temperature as the bed. After several days the bed may be covered with a few inches of straw, to prevent excessive evaporation. The temperature of houses in which Mushrooms are now growing should be kept at near 55° at night as possible. The walls and floor may be damped whenever the atmosphere becomes too dry, but frequent waterings of the beds should be avoided as far as possible. When waterings are really necessary, rain-water should be used.

Tomatoes.—Tomato plants for fruiting in winter may be given a temperature of 55° to 60° at night, and the ventilators should be left partly open to allow the escape of superfluous moisture. Extra attention to watering is necessary during winter. If plants are growing freely, they may be watered once or twice each week with liquid manure. Side shoots may be reduced to admit light to the fruit, but more freedom of growth should be allowed now than in summer for the purpose of encouraging root-action. The fruits should be gathered before they become over-ripe, and placed in a cool fruit-room, where they will keep fresh for some time.

Cucumbers.—The plants which were put out in August should now be at their best. Do not overcrop them, but remove all deformed fruits, and do not allow any to remain on the plants now beyond what are necessary to maintain a daily supply. Top-dress the beds whenever young roots appear, using loam and leaf soil in equal quantities. Syringe the plants on fine afternoons and close the house early. Young plantations made in September should be given a temperature of 65° at night, and their foliage should be well thinned out. If it is allowed to become crowded, soft growth will be the result, and although such growth would be welcome in spring, it would not be likely to stand through a dull winter.

THE HARDY FRUIT GARDEN.

By A. R. SEABLE, Gardener to the Marquis of Northampton, Castle Ashey, Northamptonshire.

Planting bush fruits.—The season has been very favourable up to the present for planting all kinds of fruit trees. Where the work has been delayed a start should be made at once, and every endeavour made to hurry it forward, as trees planted late seldom grow so satisfactorily as those planted whilst the ground is fairly warm and with the prospect of a few weeks of open weather afterwards. The trees are retaining their foliage late this season, but the wood seems to be well matured and the trees are in a good condition for moving. Any well-drained, moderately deep soil is suited to the Gooseberries, also Red and White Currants, and the situation should preferably be an open one. Black Currants generally succeed best in a partially shaded position. It is not essential to select an exposed position for any of these small fruits, and good results may be obtained under the partial shade of orchard trees, a system usually adopted by market growers. But it must be remembered that the best dessert fruits of Gooseberries are not produced under such conditions. The bushes may be planted at distances of 5 feet to 6 feet apart each way. In the case of Red and White Currants, and Gooseberries, the bushes should be trained on a stem about 1 foot high, as this will enable the ground to be cleared beneath them and suckers are prevented. In the case of Black Currants, however, suckers are desirable, and the bushes should be encouraged to form them, as strong, basal growths furnish the best fruits. A selection of Gooseberries includes Whinham's Industry, Keepsake, Crown Bob, Langley Beauty, Whitesmith, Trumpeter, Thumper, Dan's Mistake, King of Trumps, and Green Gasconne. Good varieties of White Currants are Versailles, White Dutch, and Transparent; the best Red Currants include Red Grape, The Comet, Fay's Prolific, La Versailles, Ruby Castle, and Red Dutch, whilst Boskoop Giant, Lee's Prolific, and Carter's Champion are excellent varieties of Black Currants.

Pruning.—The pruning of these bush fruits may be proceeded with, except where birds are destructive to the buds, in which case it should be delayed till later, unless nets are employed. In pruning the Gooseberry, it is important that the centre of the plant be well thinned out, so that the sunlight and air may reach all the shoots, and that the fruits may be gathered easily. Shoots having a tendency to grow in a downward direction should be removed. The best Gooseberries are obtained from bushes which have been pruned severely and fed copiously with manure water. Black Currants produce the finest berries on the strong shoots that arise from the base of the bush, therefore remove all old and superfluous wood, including weak suckers. Red and White Currants bear their fruits upon spurs, therefore they must be pruned quite differently from Black Currants. All shoots of Red and White Currants which are not required for extension should be shortened to two or three buds to form spurs. After the pruning is finished and the ground made tidy again, dust the bushes with a mixture of quicklime and soot, to check fungus diseases and render the buds distasteful to birds.

THE FLOWER GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS,
Aldenhall House, Hertfordshire.

Outdoor Chrysanthemums.—The genial autumn has been most favourable for the flowering of these plants. Although border Chrysanthemums will pass safely through the winter in the open ground, we prefer here to lift the stocks after the flowering period and replant them in spring. By this system better facilities are offered for obtaining stock by cuttings in the spring. Lift the plants carefully, and keep the labels attached to them. A good plan is to tie the label to the portion of stem that is left after the plant is cut down. The plants should be placed closely together in a cold frame, and the roots just covered with soil. Admit an abundance of air whenever the weather will allow, and on fine days the lights may be removed entirely.

Montbretia.—The bulbs of Montbretias may now be lifted for storing away for the winter, as excessive wet would cause the bulbs to decay. We place them closely together in boxes contain-

ing a light, sandy compost. Stand the boxes in a cold frame on an ash bottom, where plenty of light may reach them in a position free from drip. The newer varieties are greatly superior to those of the old type, and are indispensable for cut flower and decorative purposes.

Protecting plants.—To what extent protection has to be carried out in a particular garden depends partly upon the species it contains and the district in which it is located. To cover a plant unnecessarily and so coddle it is almost as bad as insufficiently protecting it, for when the protection is removed the growth is so tender as to be very susceptible to late spring frosts. For tender subjects a covering has often to be placed of sufficient thickness to make it almost permanent for the winter months, though this has in many instances a deleterious effect on the plant. If plants with foliage have to be covered in this manner, it is desirable to remove the covering on favourable occasions to admit light and air. This may often be done during open weather if precautions are taken against sudden changes. Tender shrubs of moderate size may be protected by placing a few pieces of Spruce branches around them, inserting them firmly in the ground. Those that require more protection and are not too large, may be encased with a wire cage and packed, not too tightly, with bracken. Larger shrubs on walls, that are likely to be injured only by very severe weather might be easily protected temporarily by placing reed mats or wattle hurdles before them. The hurdles are especially useful in the early spring for affording protection from cold winds and frosts. Herbaceous plants should be given a covering of finely-sifted under ashes placed round the base, or if further protection is required, as in the case of Gunneras, the crown should be covered well with straw or bracken, and then firmly inserted and pegged down. This preserves a neat and tidy appearance throughout the winter, but temporary shelter will be again required when this is removed. Many subjects in the rock garden will be much benefited by the protection of a small handlight, or a sheet of glass placed above them to shield them from heavy rains. Make the plants secure from the attacks of slugs, and place baits for this pest.

THE APIARY.

By CHILBERTS.

An apiary in an uproar.—Unfortunately bees sometimes get out of hand in apiaries. It is ignorance that causes nearly all the trouble that arises from stinging. A beginner had been told that it was quite safe to extract honey very near the apiary, when bees were actively bringing in honey. A severe thunderstorm occurred early in the afternoon and drove all the bees home. When the storm had passed he began his work again, thinking all was well, but the rain had washed all the nectar out of the flowers from which the bees were gathering their stores. When the beekeeper went to his hives for a fresh supply of shallow frames, to his astonishment the docile bees of the morning were now wholly unmanageable. He was severely stung, and completely driven away from the apiary. Sometimes a beekeeper during a slack season manipulates the frames, and the bees, being disappointed because the food supply has been cut off, are then easily roused. They are best left alone at such times, for a week or more, until they have become accustomed to the new state of affairs. Even then, the hives should not be opened for a longer period than is absolutely necessary, for strange, lazy bees, with robbing instincts, will be ready to gain an easy load from the open hive. This will soon set the whole apiary in an uproar. At other times the careless apiarist leaves bits of honeycomb about during this period of enforced laziness, and this is sufficient to so arouse the bees that passers-by, even in roads some distance away, will not escape injury from stinging. When the beekeeper is feeding with syrup, the robbing spirit is easily roused, especially if a little of the sugary fluid be spilled, and then stinging becomes a common practice. An apiarist should cultivate the spirit of observation and he will soon be able to judge when it is safe to work among the bees, and thus save himself and his neighbours much unnecessary annoyance.

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APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, NOVEMBER 8—

Royal Hort. Soc. Coms. meet. (Lecture at 3 p.m. by Mr. Cecil H. Hooper, on "Observations on the Blossoming of Hardy Fruits.") Birmingham & Midland Counties Chrys. Sh. at Bingley Hall (3 days). British Gard. Assoc. Ex. Council meet. Ulster Hort. Soc. Sh. at Belfast (2 days). Oxford Chrys. & Fruit Sh. Southampton Chrys. and Fruit Sh. (2 days). Worthing Chrys. Sh. (2 days). Finchley Chrys. Sh. (2 days).

WEDNESDAY, NOVEMBER 9—

Northampton Chrys. Sh. (2 days). Bath Gard. Soc. Chrys. Sh. at Assembly Rooms, Bath (2 days). Liverpool Hort. Assoc. Autumn Sh. (2 days). Highbate & Dist. Chrys. Sh. (2 days). Doncaster Chrys. Sh. (2 days).

THURSDAY, NOVEMBER 10—

Wandsworth & Dist. Chrys. Sh. (2 days). London Branch of B.G.A. meet. Weston-super-Mare Chrys. Sh.

FRIDAY, NOVEMBER 11—

Sheffield Chrys. Sh. (2 days). Altrincham Chrys. Sh. (2 days). Chrys. and Fruit Sh. at Corn Exchange, Mark Lane. Huddersfield Chrys. Sh. (2 days). Bradford Chrys. Sh. (2 days).

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich—44.3°.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, November 2 (6 p.m.): Max. 48°; Min. 39°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, November 3 (10 a.m.): Bar. 29.3; Temp. 45°; Weather—Sunshine.

PROVINCES.—Wednesday, November 2: Max 99° Ireland S.W.; Min. 80° Yorkshire.

SALES FOR THE ENSUING WEEK.

MONDAY, TUESDAY, WEDNESDAY, THURSDAY, AND FRIDAY—

Dutch Bulbs at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.

MONDAY—

Sale of Nursery Stock at The Nurseries, East Grinstead, by order of Messrs. J. J. Wallis & Sons, by Protheroe & Morris, at 12.

TUESDAY—

Sale of Nursery Stock at Burnt Ash Hill Nurseries, Lee, S.E., by order of Messrs. B. Maller & Son, by Protheroe & Morris, at 11.

Azaleas, Palms, &c., at Protheroe & Morris's rooms at 5.

TUESDAY, WEDNESDAY, THURSDAY AND FRIDAY—

Sale of the Ninth Portion of Nursery Stock at St. John's Nurseries, Worcester, re R. Smith & Co., Ltd., by Protheroe & Morris, at 11.30.

WEDNESDAY—

200,000 Fruit Trees at Perry Hill, Cliffe, near Rochester, by order of Messrs. Horne & Sons, by Protheroe & Morris, at 11.30.

THURSDAY—

Roses, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.30.

FRIDAY—

Orchids in variety, at Protheroe & Morris' rooms at 12.45.

In the death of Dr. Melchior Treub, who was until recently **A Great Botanist.** Director of the Botanic Gardens of Buitenzorg and of the Agricultural Department of Java, botanical science has lost one of its ablest exponents and the world one of its great men. For Treub was more than a botanist; he was an administrator of the first order, and one who did the world a great and lasting service by extending the hand of fellowship and help to scientific men of all lands. Born at Voorschoten, near Leyden, in 1851, Treub entered the famous University of Leyden in 1869, and at the conclusion of his University career became assistant in the Botanical Institute from 1874 to 1880. In this position, his intellectual and personal qualities so impressed the Dutch Government that he was appointed at the age of 29 to the Directorship of the now famous garden at Buitenzorg. There, for 29 years he

laboured, and there, he has erected for himself a lasting monument, which reflects honour on his name and on the Government which he served.

A great idea dominated Treub's work, and guided his policy. Science to him was not an end in itself but an instrument to be used for the progress and welfare of mankind. But to give real effect to that idea, science must lead, and not be merely an occasional ally, in the practical affairs of this world. To carry out his dominating idea, he addressed himself with equal energy to two great tasks: one, to make of Buitenzorg the tropical Mecca, whither all the world's botanists should desire to make pilgrimage; the other, to rear a great Agricul-

in the world and a fine symbol of Treub's greatness is the "Laboratoire des Savants Etrangers," which he erected in the gardens at Buitenzorg for the use of foreign botanists. It is worth more than a passing thought: a fine conception and a noble achievement, this building a laboratory exclusively devoted to the service of "foreigners." It was characteristic of the man, of his splendid energy and fine suavity, of his keen intelligence, and, above all, of his belief that science shall help and direct the progress of mankind.

Of Treub's many contributions to botanical science it is unnecessary to speak here in detail. They include subjects dealing with almost every branch of the science; it may be said without hyperbole that "he touched no-



THE LATE DR. TREUB.

tural Department for Java, based on scientific knowledge, and conducted by scientific men.

Both tasks were crowned with success. The volumes of the *Annales du Botanique Jardin de Buitenzorg* were all, save the first, issued under Treub's editorship, and contain invaluable contributions both from the editor and also from workers attracted to Buitenzorg by Treub's ever-increasing reputation. This series of volumes provide an enduring testimony of Treub's devotion to pure science and to the importance of his botanical discoveries.

The existence and activity of the Java Agricultural Department, of which he became the first Director, are witness that his aspirations to make scientific discovery serve the interests of mankind have been accomplished. Unique

thing which he did not adorn." Like the man himself, his style had a singular charm, lucid, simple, sincere, and yet always virile. His world-wide circle of friends mourn his death, which followed so speedily on his retirement from active service in Java. Worn out at last by almost 30 years' strenuous work in a tropical climate, Treub returned to Europe last year. After visiting Egypt, he proceeded to the Riviera. There, at St. Raphaël, near Cannes, on October 3, death overtook him.

The portrait of Melchior Treub, which we owe to the courtesy of Messrs. E. J. Brill, of Leyden, depicts the mingled strength and sweetness which made for him friends and admirers everywhere, but nowhere more than in this country.



FIG. 141.—NEPENTHES X NOBILIS.

NEPENTHES X NOBILIS.—This is a recent hybrid *Nepenthes*, raised by Messrs. JAMES VEITCH & SONS, who have provided horticulturists with so many valuable additions to this genus. It is the result of a cross between *N. sanguinea* and *N. Curtisii* *superba*, both parents being remarkable for rich colouring. Our illustration in fig. 141, which is reproduced from a sketch by Mr. WORTHINGTON SMITH, is slightly reduced, the pitchers being as much as 15 inches in length. As will be seen from the illustration, the rim is very prettily marked, whilst the upper part of the pitcher is remarkable for the dark-red mottling on a ground of lighter red, which gradually disappears, until, at the bottom, the colour is a tint of green. The specimen exhibited by Messrs. VEITCH at a meeting of the Royal Horticultural Society on October 25 last bore ten finely-developed pitchers, and Messrs. VEITCH obtained for it an Award of Merit, which was recommended by the Floral Committee.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Committees will take place on Tuesday, November 8. In the afternoon Mr. CECIL H. HOOPER will deliver a lecture on "Observations on the Blossoming of Hardy Cultivated Fruits."

GOOSEBERRY - MILDEW.—In consequence of the spread of American Gooseberry-mildew during the past summer, the Board of Agriculture and Fisheries recommend all purchasers of Gooseberry bushes, from whatever source they are obtained, to examine their purchases very carefully on delivery, to cleanse the plants thoroughly from all earth, and to remove and burn the tips of the shoot before planting. If any trace of disease is found, the purchaser should communicate with the Board, and supply full information as to the source from whence the consignments were obtained, in order that the matter may be investigated.

FRUIT AND CIDER INSTITUTE.—Sir EDWARD STRACHEY, Parliamentary Secretary to the Board of Agriculture and Fisheries, has become a member of the Managing Committee of the National Fruit and Cider Institute.

EXHIBITION AT BOSKOOP.—The exhibition of forced shrubs and perennials at Boskoop in April, 1911, will occupy a space of 3,400 square metres.

TURIN INTERNATIONAL EXHIBITION, 1911.—The Exhibition Branch of the Board of Trade has issued a "Memorandum of Information" relating to the Turin International Exhibition. The exhibition is to open in April, and to remain open for about seven months. The exhibition grounds cover some 247 acres, and embrace the whole of the Valentino Park, which is situated on either side of the River Po. The site secured for the British section amounts to about 220,000 square feet, and is situated in a central position. The sections of horticultural interest include the following:—Economies of Forestry; Forest Management; Meteorology, Agricultural Geology and Study of Soils; Methods and Systems of Manuring; the Cultivation of the Vine; the Cultivation of Fruits, Vegetables and Flowers; Gardening Implements and Tools; Teaching and Appliances for Teachers; Plant Pathology, &c. In addition to the permanent exhibition there will be three temporary horticultural

exhibitions, the first on May 15-25, the second September 16-24, and the third October 25 to November 4. The schedules of the temporary exhibitions are now published and may be had, together with the Memorandum and the complete schedule, from the Director of the Exhibition's Branch of the Board of Trade, Queen Anne's Chambers, Broadway, Westminster, London, S.W. Among the members of the Agriculture, Horticulture and Food Products Committee are the following representatives of horticulture:—THOMAS BEVAN, W. A. BILNEY, E. A. BOWLES, M.A., H. B. MAY, Sir DANIEL MORRIS, K.C.M.G., C. HARMAN PAYNE, Lieut.-Colonel PRIN, Sir ALBERT K. ROLLIT, ARTHUR W. SUTTON, and HARRY J. VEITCH.

APPLE "HOUNSLOW WONDER."—Our artist and a contributor draw attention to a mistake in the sketch of Apple Hounslow Wonder, published in the issue for the 22nd ult. The blunt ends of the pips should point in the reverse way to that shown.

GREASE-BANDING OF FRUIT TREES.—An interesting contribution from Professor F. V. THEOBALD on the subject of grease-banding is contained in the current number of the *Journal of the Board of Agriculture* (October, 1910). Professor THEOBALD records the results of observations and experiments initiated with the object of ascertaining why, though some, perhaps the majority, of fruit-growers, have found the practice successful, others have not. The general conclusion to which his observations point is that if the banding is properly carried out it is of great benefit to standard trees though not to all bush trees. The contribution is rendered particularly interesting by reason of the tables giving lists of the insects actually caught in grease-bands on three Apple and three Plum trees in 1908-9 and in 1909-10. The lists show that, of the winter moth, 125 females and 275 males were caught from October, 1908, to February, 1909, and that, in addition, large numbers of other noxious insects were trapped by the grease-bands. Experiments made to determine the best position for the bands lead to the conclusion that for them to prove effectual they should be placed at not less than 4 feet from the ground, and that 4½ feet is safer. It is owing to this fact that for bush trees, banding is probably not to be advised. Of the greases generally employed, those of the birdlime type or tanglefoot are to be recommended on the ground that they retain their "tackiness" for long periods of time. Another matter which counts for a good deal in practice is the quality of the paper used; thick parchment paper, grease proof if possible on both sides, is what is required. Professor THEOBALD's article should be read in its entirety by all fruit-growers, and possibly those who have given up banding as of little use may thereby be induced to give the method a further trial.

THE DESTRUCTION OF ANIMALS IN SOIL.

An interesting article in the *Revue Horticole* (No. 20, October 16, 1910), by Mr. L. MAGIN, gives a summary of the methods usually employed to destroy the various soil-animals injurious to plants. To rid the soil of worms in places where they are undesirable, in spite of their beneficial effects on soil fertility, Mr. MAGIN recommends watering the ground in the evening with a two per cent. solution of ammonium carbonate. Worms and also millepedes are driven to the surface by the ammoniacal vapour given off by the carbonate of ammonia, and may be collected and destroyed. Of the poisons which are most suitable to destroy the smaller noxious soil-animals, mention is made of lysol (five per cent. solution), formaline (five per cent.), and carbon-bisulphide, all of which give off poisonous vapours. Copper sulphate, mercuric chloride,

and zinc salts are highly toxic for animals, but unfortunately they are poisonous also for the roots of plants, and so—if used at all—are to be used with great caution. Mr. MAGIN recommends that a trial should be made of arsenite of potassium in very dilute solution (1-5th part in 1,000 parts of water). In this strength it is said to be without injurious effects on plants. In common with arsenical salts in general, arsenite of potassium is in the highest degree poisonous to animals and to man, and should therefore only be employed after all proper precautions have been taken. Inasmuch as many animals pass into a resting stage and inasmuch also as the eggs, e.g., of eelworms, &c., are possessed of great powers of resistance, it is necessary to "repeat the dose" once or twice at fortnightly intervals.

PUBLICATIONS RECEIVED.—*The Fruit Magazine*, October, 1910. (Vancouver: *The Fruit Magazine Publishing Co., Ltd.*) Price 10 cents. (5d.).—*United States Department of Agriculture. Bureau of Entomology. Bulletins: Papers on Deciduous Fruit Insects and Insecticides. On the Nut-Feeding Habits of the Codling Moth*, by S. W. Foster; *Papers on Cereal and Forage Insects. The Cowpea Curculio*, by Geo. G. Ainslie; *The Anatomy of the Honey Bee*, by R. E. Snodgrass.—*Land Tax Valuation: How to Fill up the Forms*, by John F. McIlwraith. (London: Effingham Wilson, Threadneedle Street, E.C.) Price 2s. net.—*Old Moore's Almanack, 1911*. (London: T. Roberts & Co., Crane Court, Fleet Street.) Price 1d.—*National Fruit and Cider Institute, Long Ashton, near Bristol. Reports for the years 1907, 1908 and 1909* (Bath: William Lewis & Son).—*The National Fruit and Cider Institute: Its Origin and Objects*, by A. E. Brooke-Hunt. (Bath: William Lewis & Son.)

NEW CHIEF OFFICER OF L.C.C. PARKS.

[THE London County Council has once again given effect to its previously enunciated and unfortunate theory that the chief officer of parks need not be possessed of horticultural experience. The triviality of the arguments by which this naive theory is supported by its exponents may be judged by anyone who cares to read the report of the Council meeting which we reproduce below. We have protested before against this attitude of the Council, and we protest again. The arguments which we used on a former occasion remain unanswered and unanswerable. We need not repeat them. Our report will go throughout the world, and places on record the reasons advanced by the Council in support of a policy which must be condemned by everybody who knows how unnecessary it is to go outside the ranks of horticulture in order to find men capable of filling this post.]

The London County Council, at its meeting on Tuesday, appointed, on the recommendation of the General Purposes Committee, Major Philip Maud, R.E., C.M.G., F.R.G.S., to be chief officer of the Parks Department, in succession to Major Enthoven (deceased), at a commencing salary of £700 a year.

Mr. ERNEST GRAY (chairman of the committee), in moving the appointment, dwelt upon the process of selection followed after 145 applications had been received in answer to the public advertisement. A sub-committee made a preliminary selection of 25 candidates, and subsequently reduced this number to 16. Having interviewed these candidates, the sub-committee finally recommended six selected candidates to the committee. After careful consideration of the merits of each candidate, the General Purposes Committee now recommended the appointment of Major Maud, but, to comply with the Standing Orders, submitted three names as follows:—

Mr. A. D. Blaschek, F.C.H.
Maj. Philip Maud, R.E., C.M.G., F.R.G.S.
Maj. C. B. Winter.

They were asked, proceeded Mr. Gray, to appoint, not a chief gardener, but the chief of a department—an official who would control a

large staff, act with discretion and judgment, and be in a position to advise the committee with which he would be associated. He would have to supervise the gardens and open spaces of London. While he agreed that the possession of technical qualifications was desirable, it was equally desirable that the man should have those qualities which would bespeak the confidence of a large staff. Major Maud was a man in whom every workman would realise that he would have justice. It was not suggested that either of the three applicants whose name was upon the list was devoid of technical qualifications. As a matter of fact, the committee had no small difficulty in making their selection from the candidates before them. Neither in the committee nor in the sub-committee had the appointment been made a party question, and, so far as he was concerned, he had not the faintest idea what the political views of any single candidate might be. It was said that they ought to have a man with high gardening qualifications. He appreciated that point of view, but he put it to the Council that that was not the most desirable of all qualifications. They had in the park service a number of men possessed of technical qualifications, but the difficulty confronting them was to find such a man who also possessed that power of control and supervision which he thought was essential in the head of a large department. At all events, they were submitting the name of a man who had rendered excellent service to his country. It was a rather sorry comment on the public life of Great Britain that a man who had rendered such service to his country should find himself, in the very prime of life, without occupation—that he should find himself without State occupation likely to attract a man of his high qualifications. He had also heard it put forward as being a disadvantage that the candidate was a soldier. He wished to enter an emphatic protest against the suggestion that, because a man serves his country in the Army, he was not fit to serve that Council in the capacity proposed. The committee had before them two groups of candidates—the one of gentlemen highly qualified technically and the other of men highly qualified in other directions. They were not unconscious of the lines of argument on behalf of both groups, but their instructions were to appoint the head of a department, not a chief gardener, and he believed, in submitting the name of Major Maud, the Council would be fortunate in obtaining the services of one who possessed those high qualifications which fitted him to take his place in that brilliant group of men already in the Council's service.

Mr. STANLEY HOLMES, who moved the reference back of the report, said the fact that Mr. Gray had found it necessary to make such a long speech in the nature of an apology for the recommendation, showed that there was something about the appointment which needed a good deal of explanation. There was a similar debate when the office was filled in February last, and then the discussion ranged round a statement by Capt. Swinton that the Council did not require a gardener, but that it was essential for the purpose of maintaining discipline that either a naval or military man should be appointed. Once again the proposal was to fill the post with a military officer. They did not object to the man in any possible way because he was a soldier, but they did object that it should be laid down as a principle that a soldier, and only a soldier, should be appointed as chief officer of the Parks Department for London. The advertisement said that members of their staff were not precluded from the appointment. If it were laid down that only a military man should be appointed, then it was a dishonest advertisement which was inserted in the *L.C.C. Gazette*. They had before the General Purposes Committee the chief officer of the Birmingham Parks Department. They paid his expenses to come to London out of the rates, and he had to ask the Birmingham Council for time to come up. All the while they had no intention whatever of appointing that man, because he was not a military man. The whole thing was a piece of humbug. The party opposite decided all along to appoint a military man, and the advertisement was really so much window-dressing. As regards Major Maud, the one thing in his favour was his name—they had always associated the name of Maud with coming into the garden. Beyond the fact that he was undoubtedly

an eminent soldier and had served his country well, it was difficult to find any sufficient reason why he should have control of London's parks. His qualifications showed that in 1903-4, at Aldershot, he had control of the canteen, grocery-shop, coffee-shop and supper-room. The last three were worked by contracts, given out and supervised by him; the canteen was under his personal management. Were they going to have canteens in London parks? He thought the soldier's view of a canteen was something very different from their refreshment rooms. Perhaps his best qualification, however, was that he "has frequently been called upon to carry out work of which he had no previous practical experience." This would account for his appointment under the London County Council to do work of which he had had no previous practical experience. They seriously objected to men being set aside who had worked their way up from the bottom of the ladder, and were now in charge of the parks of the chief cities of this country.

Mr. C. J. MATTHEW seconded. He had, he said, no intention of sneering in any way at Major Maud or his great services to the Army. He felt, however, very strongly that the appointment was setting up a very dangerous and bad principle. It was a matter of very little credit to the Council that they had appointed men to subordinate positions who were not now fit to take charge as heads of departments. Faring their own staff, they should have gone to those who had charge of parks in the country. The head of that department was, in point of fact, to be their chief gardener. They talked about discipline, but he ventured to think that a man who had done most of his work in India, and had been engaged in the management of large quantities of black labour was not quite the sort of man for Englishmen. He had heard it said over and over again that they could not treat a white man like a black man, and he therefore submitted that Major Maud was not the right man. Even in the panic-stricken condition some of them were they did not want a man to tell them how to fortify Lincoln's Inn Fields. They did not want anybody to drill the Daisies, but somebody to show them how to grow grass. He wanted the recommendation to go back, not with any reflection upon Major Maud, but so that the committee could bring before them one or two names of qualified gardeners. This was not India. They wanted primarily a man who understood gardening in London, and if not London, then in England. They would never think of having a soldier at the head of the sewers. He was told that the committee had before them a candidate who had had great experience in looking after the parks in Birmingham: he, at any rate, had learned to dig, and knew which end up to plant Crocuses. It was a disgrace to the Army that it could not give such an officer as Major Maud the occupation for which he was best suited.

Mr. H. E. A. COTTON complained that the Parks Committee had been ignored in the matter of selection. He gathered that Major Maud had reviewed the strategic situation of the Galapagos Islands. Whatever his knowledge of those islands was, it would not help him in the management, say, of Battersea Park. He also noticed that he had won for himself a reputation for rapid plate-laying. That being so, why was he not secured for the tramways? At the end there was, however, a real qualification. Last year he designed and laid out a private garden for a friend. The Council regarded those qualifications now as jests, but they were actually put before them in print as reasons why Major Maud should be appointed chief officer of the Parks Department. How could anyone exercise an efficient and intelligent supervision over a business he confessedly did not understand? Who was going to teach Major Maud horticulture? Meanwhile the men under him could lead the Major by the nose. Having some personal knowledge of Anglo-Indian methods, he for one did not want to see them introduced into the Parks Department or any other department of the London County Council.

Mr. H. C. LEA said he sincerely hoped Major Maud would be appointed. It was easy to poke fun at a man. He felt that a good many members on that side of the House had a rabid antipathy to giving a chance in life to an ex-Army or Navy man. "That is so," he added with emphasis, "and so long as

I am here I shall protest against it." He challenged any member, unless he confessed himself prejudiced, to find fault or cavil at anything in Major Maud's records of service. There was not a single point in his history which did not redound to his credit. Since last Sunday he had made inquiries of ex-engineers and sappers who had served under him, and they all gave him the highest possible character. It would be a scandal and an outrage not to give Major Maud a position which would be a gain to the ratepayers of London, though a loss to the taxpayers, consequent upon his severance with the Army.

Mr. E. SPICER said to him it was not a question whether the candidate was a soldier or a sailor, but whether he was theoretically and practically a gardener. Major Maud's life had been spent in soldiering, and not in gardening. They had about 2,000 acres of garden land to look after, and he asked whether the Duke of Westminster or the Duke of Norfolk would appoint a soldier to drill the gardeners in their parks? They wanted a man who could go into each park and advise the superintendents. The committee had committed a great error of judgment.

Sir GEORGE GOLDIE, in supporting the appointment, urged that it was really an organiser that the Council wanted.

Mr. GEORGE LANSBURY said the Labour members objected to the work of the Council being reserved in any sort of way for old soldiers or old Navy men. They did not want it to become understood that if a man went into the Army there would be a "nice, soft job" for him under the municipalities later on. Major Maud, probably, was one of the best candidates, but they were actuated by a feeling that there were plenty of civilians who were quite capable of organising the department. He had been told that the money spent on London parks was largely wasted because the department had never had at its head an expert horticulturist.

Mr. J. D. GILBERT, referring to a statement made by Mr. Gray, said Major Maud was not without occupation at the present time, for he was on the General staff of the Army headquarters. The reason he wanted to give up his appointment was because he did not think his chances of promotion there were as good as they ought to be. Twenty-two of the candidates were in their own service, and the sub-committee came to the conclusion that three of them were worthy of consideration for appointment, but the committee did not interview one of them. That was one reason why he disagreed with the report, for in an appointment of that sort members of the staff ought to be given equal consideration with people outside.

The Rev. STEWART-HEADLAM said there was no kind of suggestion that Major Maud knew anything about gardening. He urged upon those in authority to induce Major Maud, if he were given the appointment, to devote part of his time to this beautiful art of gardening. He appealed to Sir George Goldie not to be content with the candidate's military experience.

The reference back was defeated by 69 votes to 47, and the recommendation of the committee was then agreed to.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

TRIALS AT WISLEY.—At a meeting of the Council of the Royal Horticultural Society, on October 25, a letter was read from one of the leading seed firms pointing out that it was not fair in the trial of Peas at Wisley to compare and to adjudicate on the merits of varieties sown on different dates; and urging that all Peas sent for trial ought to be sown on one and the same day. The Council quite saw the point, but felt, on the other hand, that it would not be fair on an admittedly late Pea to sow it on the same day as an admittedly early one. After consideration, it was decided, for 1911 and in future, to ask for 1 pint, instead of $\frac{1}{2}$ pint, of seed Peas, and divide it into three parts, and make sowings of all varieties on three different dates, suiting early, mid-season, and late Peas, as in this way only could the two difficulties mentioned

be overcome. It is desired, therefore, to correct the list of trials which appeared in these columns a fortnight ago by substituting 1 pint for $\frac{1}{2}$ pint of Pea seed required to be sent to Wisley. W. Wilks, Secretary.

A special Sub-committee of the Floral Committee of the Royal Horticultural Society visited Wisley on October 18 last, when Awards of Merit were recommended to the following, and which were confirmed by the Council at its meeting on the 25th inst.:—Chrysanthemum—Crimson Queen, October Gold, Bouquet Rose, Eden (all from Messrs. Dobbie & Co., Edinburgh), Freedom (Messrs. Wells, Merstham), Wells's Scarlet (Messrs. Wells and Messrs. Dobbie & Co.), Mrs. Tom White (Messrs. Wells, Merstham), Snowstorm (Messrs. Wells, Merstham). W. Wilks, Secretary.

INTERNATIONAL EXHIBITION, 1912.—I wish to support your suggestion that a discussion on Phylloxera regulations be arranged at the forthcoming International Horticultural Congress, at which many foreigners will be present. To show how the matter is looked on by one of the leading French nursery firms, I translate the following remarks from a letter recently received from one who is now a German subject:—"The German custom house is so uncertain as regards living plants coming from England, that I cannot accept your amiable offer of seedlings. Generally, plants are disinfected at the frontier, or so much delayed, that usually one cannot use them. This is because England has not adhered to the International Phylloxera Convention of Berne. She did well not to adhere, because the thing is a pure 'blague'; but Governments as insane as ours profit by that to impede exchanges with countries not included in this union." H. J. Elwes.

MONTBRETIAS.—Mr. Divers states on p. 318 that Montbretias require transplanting every two or three years, or they become weak and refuse to flower. There is a variety growing in cottage gardens in East Cardigan that I have known as *crocus-mellera*, flowering freely that have not been disturbed since they were planted many years ago. At Havod, as well as in other gardens, I have seen Montbretias that did not seem to have been disturbed lately, flowering well. In the cottage gardens the soil is light and shallow, resting on the carboniferous rock, which, in some places, is within 18 inches of the surface, and the locality is bleak and cold. At the Havod gardens the soil is light, the situation low and well sheltered, and near a river, the water from which in winter percolates into the garden, so that if an excavation be made 2 feet or 3 feet deep the water level is reached. Mr. James, the gardener, who is my nearest neighbour, informed me that he has to afford protection to such hardy plants as Cabbage, and that he is forced to winter most of his Strawberry plants under glass, planting them out in spring. Here the Montbretia grows under the most opposite conditions to those described by Mr. Divers. W. P. R., Cwmystwyth.

WHY NEED THERE BE EQUAL PRIZES? (see pp. 297, 318).—My answer is, because occasionally it is unavoidable. The one object that judges should keep before them is justice to the exhibitors, and not the carrying out of any particular fad or principle which they may have or hold. It is argued that there is always a "dividing line" between two exhibits. I admit that any judge who starts with the idea that he will not award equal prizes will find a difference at least of a half or a quarter of a point between any two exhibits. But no judge is infallible, and when two extensive and varied exhibits have only a quarter of a point between them, it is a matter of opinion, and not always of fact, as to which should be awarded the premier prize. Let me illustrate my contention. Two judges have before them two exhibits of 36 Chrysanthemum blooms in distinct varieties. One prefers No. 12 exhibit and the other No. 14. The judges decide to "point" the exhibits, allowing a maximum of six points for each bloom, and these are again divided into four quarters. (I have heard of some judges who allow a maximum of five, representing five shillings, and divide each again into 12, representing 12 pence.) The judges agree as they go on as to the number of points each bloom is worth. It may happen both exhibits receive the exact number of points. Now the judges are

faced with the fact that "equal prizes are objected to," and that they, the judges, will be told that they do not know their business. They rejudge the exhibits, with the result that they find a difference of half a point, and No. 12 gets the 1st prize of £12 and the other the 2nd of £8, and everyone is satisfied except the exhibitor of No. 14. But should the same exhibits be rejudged by the same two judges, a slightly different decision may, and probably would be, arrived at, and the previous award be reversed. Of course it will be argued that these judges do not understand their work, but let six of the best and most practical men of the day be divided into three couples, and set to point an extensive collection of fruit, and no one will say that each couple will produce the same total in the result. My contention is that where two exhibits run each other equally, and there is a considerable amount of money between the 1st and 2nd prizes, it does not become any set of judges to refuse to make equal awards, dividing the two amounts of prize money equally. There can be no objection to rejudge and thoroughly rejudge the exhibits, but not with the object of "saving their faces," but rather that of justice to the exhibitors. *W. J. Cooper.*

Judging by some of the opinions recently printed, it would seem to be a serious error on the part of judges to place any two exhibits or collections exactly equal. What is to be inferred from these opinions is, that if any two exhibits happen to be exactly equal in every respect, yet it is the judge's duty to make one better than the other, not for the sake of justice but to save their reputations; that is strange philosophy. In such case one exhibitor benefits and the other has to suffer. Happily, such remarkable equality of merit in competitions seldom occurs, but it does sometimes. If judges are disposed to deal with exhibits generally on the *laissez faire* principle, easy judgments might be frequent. But that is far from being the case, and when two or three good men find it is impossible for them, if they are to be just, to separate two exhibits because merit is absolutely even, why should their conscientious action be adversely criticised? *D.*

CASH PRIZES OR PLATE?—Although Mr. Gurney Fowler, when presiding over the recent meeting at the Windsor Hotel, in relation to the forthcoming International Exhibition, invited discussion of the question as to whether prizes at that show should take the form of cash or plate, no opinions were publicly expressed, but many were freely given after the meeting was over. What presents itself to the minds of many exhibitors is the great cost of getting exhibits to the show, keeping them there for 10 or 12 days, and getting them home again. This cost has to be paid for in cash, and prizes in kind, however valuable, do not repay. Were the opinions of the secretaries of the great provincial shows, such, for instance, as Edinburgh, York, Wolverhampton, or Shrewsbury, invited, I think they would say that the principal exhibits at their exhibitions are there primarily because valuable cash prizes are offered. In all competitive shows, from the greatest to the smallest, the practice of giving money prizes prevails. A trading firm may have some return for its outlay, in the advertisement it gets and in additional trade. That is, perhaps, taking rather an optimistic view of such exhibiting, but it is generally assumed to be correct, although trading firms usually keep their own counsels. The position of the private gardener is a very different one. No trade benefits can follow on his exhibiting. As a rule, he has to bear all expenses incidental to getting his products to the exhibition, and to getting them home again, but he hopes for some reimbursement in the form of cash prizes. Were the prizes of kind such as plate, of course his employer, the assumed competitor, but not the real one, would no doubt claim these for his own sideboard, and the poor gardener would get nothing. It is obvious that exhibiting in several classes at the international exhibition would be a very expensive effort, because of the long time it continues, and only good cash prizes can recoup competitors. There is, of course, much truth in the contention that money, when paid, has no tangible or permanent status. It so soon disappears, whilst prizes in kind, whether of plate or of work of art, endure as mementoes. What seems desirable to enable all competitors to be rewarded as they may wish,

is to have at the exhibition a great assortment of articles, all legibly priced, from which any competitor could make a personal selection to the value of his prize or prizes, if he so desired, or he should have the full value of such prizes in cash if he prefers this form of reward. *A. B. C.*

ABUTILON THOMSONII.—There can be no doubt that the plant mentioned by *Mr. Lynch* (p. 297) is rightly named. I have a record of it reaching back to 1881, and it appeared to have been at Chiswick for some time previously. It was stated to be a hybrid, but, judging from the colour and size of the flowers, it may only be a seedling or variegated sport from *A. striatum*. In 1886 and 1887 it was still cultivated in the old gardens at Chiswick in company with several other hybrid and varietal forms when *Abutilons* were enjoying some vogue as winter-flowering plants, reared from cuttings during the previous spring. Along with it was a double-flowered form, *A. Thomsonii flore-pleno*, but neither of them appeared to great advantage beside the other *Abutilons*, because the colour of the foliage faded, owing to the feeble light of winter, and the flowers of the double form did not open freely. The downy-leaved variety is evidently *A. Darwinii*, if it has brick-red flowers and leaves blotched and spotted with pale and creamy-yellow on a deep green ground. It was grown in the same batch as the above, and, besides being in robust vigour, it had a brilliant and attractive variegation. This is no doubt the reason for its existence at the present time. *A. Thomsonii* is of most service as a bedding plant, having been extensively used in the London parks and at Hampton Court in sub-tropical gardening between the years 1884 and 1894. *J. Fraser.*

SAXIFRAGA FLORULENTA.—Is not *Mr. Farrer* rather too hasty in his criticism of the nomenclature of *Saxifraga florulenta*, as given in the *Kew Handlist of Herbaceous Plants?* (see *Gardeners' Chronicle*, October 29, 1910, p. 311). In the second edition of the *Handlist*, published in 1902, *S. florulenta*, Schott., is certainly given as the synonym of *S. linguata* var. *lantoscana*, but if *Mr. Farrer* will refer to the first edition, published in 1895, he will find the true *S. florulenta*, Moretti, *Botanical Magazine*, tab. 6102, given as growing in Kew Gardens at that date. The omission of the authority of the name of a plant, especially in a critical genus, only leads to "confusion worse confounded." *G. B. Milne-Redhead, Millard's Hill, Frome.*

POLLINATION OF SPENCER SWEET PEAS (see pp. 257 and 285).—Regarding the unfavourable colour factors which *Mr. Charles Foster* indicates, and the varieties he instances as examples, I regret I cannot criticise or in any way combat his statement. It is a pity he did not confine his remarks to sorts that ordinary growers have cultivated—there are plenty of these—and not to kinds that are as yet untried. How many, for example, grew "Earl Spencer" this season; and, again, how many will grow "Stirling Stent" even next year? These aside, however, the characteristic of non-seeding is by no means confined to these colours, but is fairly distributed over many of the other "Spencer" Sweet Peas. The question of the sterility of the pollen of some varieties is, I think, not yet sufficiently established, but I strongly suspect that one or two kinds are deficient in fertility from this cause. Every seed grower will envy the experiences of *Mr. Foster* with regard to the production of seed. Your correspondent has a wide and valued experience in the growing of the Sweet Pea, and I take this opportunity of adding my tribute to the admirable work he is so ably conducting, for all growers are indebted to his labours in this field. I cannot agree with him when he declares he knows of no colour of "Spencer" Sweet Pea that will not set seed as freely as any other annual plant in good summer weather, and I leave the "Earl Spencer" group out of consideration at present. I, among many, complain of the difficulty of obtaining seed, and it is not the same, in my experience, with edible Peas and other garden flowers. I have ripened all the seed I wanted of edible Peas, *Mignonette*, *Antirrhinums*, *Larkspurs*, *Calceolarias*, *Stocks*, *Wall-flowers* and *Auriculas*, and I have totally failed, unless where artificial pollination has been resorted to, with all the "Spencer" Sweet Peas

I have grown. They are cultivated under precisely the same circumstances as mentioned by *Mr. Foster*, that is on a sandy soil in a single long row facing the prevailing wind, and the wind can blow through them without hindrance. His remarks about growing this flower for seed would seem to indicate that the "Spencer" Sweet Pea is anemophilous, an idea that I cannot subscribe to for a moment. Then he declares that he is no believer in any bee or beetle, or any other insect being the cause of untrue stocks of this flower. After careful observation of the matter, I have such a belief, and I am now in possession of seed pods, set by bees, which I believe will confirm my statement. I have given long and careful attention to ascertain the true state of matters. As I already mentioned in my remarks on p. 257, my contention is that the modern Sweet Pea is adapted for fertilisation by insect agency, for the arrangement of the reproductive organs has been upset by selection and by the hybridist, and the flower has consequently had to adapt itself to other means of pollination. I only got a copy of *The Sweet Pea Annual* for 1910 this week, and I have just been reading there the able lecture on "The Imperfect Seeding of the Waved Sweet Pea," delivered by that experienced cultivator *Mr. William Cuthbertson* before the general meeting of The National Sweet Pea Society in December last year. I note that in the discussion following upon that lecture one of the speakers practically confirms my experiences with bees, so that I do not stand alone in this matter. My previous remarks dealt, partially, with this flower being untrue sometimes, apart from careless breeding, and the contention made by *Mr. Foster* that many "Spencers," when artificially pollinated, produce nothing but perfectly plain flowers in the F_1 generation, is outside the scope of what I had then to say, and it raises another question altogether. I do not agree with that statement, and would say that if the variety is breeding true to begin with this result is impossible. I am glad to hear from such an authority that the impurity of stocks is decreasing, but certain recent reports on the subject would seem to show that much improvement is still wanted. *George M. Taylor, Mid Lothian.*

SUGAR-BEET.—Reading your interesting leading article with reference to the proposed trials of Sugar Beets by the Royal Horticultural Society, I was reminded of some very interesting results I obtained some years ago in Essex. The educational authorities of the County Council at Chelmsford induced several farmers to grow Sugar Beet on trial. Hearing of these trials, I resolved to have one also. I applied to some of the leading Continental seedsmen for seed of the best strains. These were sown and cultivated exactly as we grew Mangold. The result was that the roots were considered to be too large. They averaged from 2½ lbs. to over 4 lbs. in weight, the tonnage per acre being 25 tons to 30 tons. The most interesting fact in connection with the trial was that the roots yielded a record percentage of sugar. The analysis was made by *Mr. G. Clark, B.Sc.*, who was then the analytical chemist at Chelmsford laboratory. Subjoined is a copy of *Mr. Clark's* report, the roots being grouped in the way he recommended me to plant them as mothers to produce seed the following year. Set A: 2 V.I.B., 18.6 per cent. sugar; 4 V.I.B., 17.2 per cent. sugar. Set B: 1 V.I.B., 17.1 per cent. sugar; 3 V.I.B., 16.7 per cent. sugar; 5 V.I.B., 16.9 per cent. sugar. Set D: 11 S.B., 19.6 per cent. sugar; 15 S.B., 18.5 per cent. sugar; 19 S.B., 19.0 per cent. sugar. I must explain that the analysis was conducted exactly as described by you in your article. Samples were taken from the roots while growing, and those giving the highest percentage were carefully transplanted for seed. The foregoing trial was made in 1905. It was not until 1908 that we had roots grown from the produce of the seed saved from the mothers referred to. The 1908 roots were analysed by *Mr. B. H. Kirkham, B.Sc.*, of the Chelmsford laboratory. He found that the percentage of sugar had gone down to quite a normal figure. I have not his figures beside me while writing. The varieties of Beet referred to under letters above are as follows:—V.I.B.—Vilmorin's Improved; S.B.—Silesian. The B in each case refers to Benary, Erfurt, from whom the stocks giving the best results were obtained. *Wm. Cuthbertson, of Dobbie & Co., Edinburgh.*

FOUR NORTHERN COUNTIES FRUIT CONGRESS.

(Continued from page 326.)

VARIETIES OF APPLES FOR CUMBERLAND AND WESTMORLAND.

The following extracts are from a paper on this subject, read by Mr. W. B. Little:—

The choice of varieties is a very important matter. Of those enumerated in a nurseryman's catalogue, only very few can be relied upon to give satisfaction. Many may produce good fruits, but the constitution of the trees is weak, and they are, therefore, liable to be attacked with canker.

Experience shows that certain varieties, such as Bramley's Seedling, Newton Wonder, and Lane's Prince Albert, thrive in practically all soils, but some others, such as King of the Pippins, Lord Grosvenor, and Ecklinville Seedling, succeed only in light soils.

Early and late varieties are more profitable than Apples which ripen at mid-season. Early varieties to be recommended for these counties are Golden Spire, Domino, Early Victoria, and Liddle's Seedling.

Mid-season varieties include The Queen, Grenadier, Royal Jubilee, and Bismarck. Late varieties: Bramley's Seedling, Newton Wonder, Lane's Prince Albert, and Scotch Bridget.

The three best varieties for amateurs are: Early Victoria, Royal Jubilee, and Lane's Prince Albert.

room for the development of those on the free stocks.

If the soil is light, Lane's Prince Albert and Golden Spire should be worked on free stocks. Bismarck succeeds best on the Paradise stock.

MANNERS AND CULTURE OF FRUIT TREES.

Mr. George Bunyard, Royal Nurseries, Maidstone, gave a lecture entitled "Manners and Culture of Fruit Trees," a summary of which we reproduce:—

Plums, as a rule, do fairly well as standards, but where bushes or pyramids, or even wall fruits are grown, some root-pruning every second year is advisable, combined with thinning of the shoots in August and helping the roots by the addition of lime, burnt earth, &c.

Apples, as a most important crop, should be principally confined to the early varieties for the north, such as (*cooking*) Early Victoria, Ecklinville Seedling, Grenadier, Potts's Seedling, Lord Grosvenor, Golden Spire, Warner's King, Royal Jubilee, and Stirling Castle; (*dessert*) Gladstone, Juneating, Quarrenden, Langley Pippin, Beauty of Bath, Irish Peach, Ben's Red, Worcester Pearmain, James Grieve, Margil, and King of the Pippins; but such hardy kinds as Bramley's Seedling, Hornead's Pearmain, and Lord Derby should do well for keeping.

Preferably all Apples should be on the Paradise stock, and the roots should be attracted to the surface by annual mulchings with short stable dung or by scratching into the soil

should be given to heavy soils, and kainit and basic slag to light soils.

Gooseberries and Currants rejoice in the cooler and more moist climates of the north, but they should be heavily manured yearly with strong manures, as fish guano, rabbit fur, cow and pig dung. Gather the first green Gooseberries from the boughs next the soil and then mulch with short litter under the boughs; treat Red and Black Currants in a similar manner.

Keep the boughs of Gooseberries and Red Currants free and open the spur in the side shoots of Red Currants in August. The old bearing wood of Black Currants should be cut out each year. The best fruit is gathered from yearling shoots.

Start to thin all fruits as early as possible, taking out such fruits as are set in awkward places, and leave the rest where they get full benefit from sun and air.

In the month of September any leaves which shade the fruits can be removed.

Mr. John W. Robson (Messrs. Robson & Sons, Nurserymen, Hexham) said the four northern counties were but poorly represented in the fruit industry of this country, and Northumberland the worst of all, there being only one county, Rutland, which showed a smaller acreage under fruit.

In Northumberland they had only 59½ acres of Apples, 16½ acres of Pears, and 9 acres of Plums. In Durham there were 91 acres of Apples, 16½ acres of Pears, and 3½ acres of Plums. In Cumberland there were 266½ acres of Apples, 11½ acres of Pears, and 8½ acres of Plums; while in Westmorland there were 156 acres of Apples, 16½ acres of Pears, and 6½ acres of Plums. In the years 1903-4-5, he pointed out, over £6,000,000 was paid by this country for foreign Apples. That was a serious outlay for an article which under favourable conditions could have been to a great extent produced in the United Kingdom. In that case the money would have been circulated in Great Britain. Upon the selection of the right varieties depended the success of the whole undertaking. He was quite ready to admit that Northumberland could not at the present be called an Apple county, and that both soil and climate were not so favourable for the production of many varieties of Apples as were some of the southern counties, but he was quite certain that by careful selection of suitable kinds success might be assured, and he thought a most important step had been taken in this direction by the keeping of records of the bearing qualities of fruit trees at Cockle Park, Hexham, Carlisle, and other places. From his own observations—having had 88 varieties of Apple in his grounds at Hexham—he concluded that the Apples which had done the best in this district during the past three years were Domino, Lord Grosvenor, Northern Spy, Potts's Seedling, Prince Albert, New Hawthornden, Lord Suffield, Nonesuch Pippin, Stirling Castle, Sipton Shield Seedling, Cellini Pippin, Warner's King, Liddle's Seedling, Adams's Pearmain and Worcester Pearmain. The best Pears had been Hessele, Jargonelle, Green Chisel, Summer Portugal, and Williams's Bon Chrétien; and the best Plums Victoria, Pond's Seedling, and Magnum Bonum. With regard to the cultivation of fruit for profit, there was undoubtedly a good opening in the north of England. There were good markets within easy reach, and a steady demand for fruit of good quality. At Newcastle, in 1908, 95,000 cwt. of Apples, of the value of £40,000, were received from foreign ports, and over and above that fruit of various kinds to the value of £50,000. But, in 1909, the Apples received at Newcastle from foreign ports only totalled 34,750 cwt., valued at £16,423. The figures, however, showed the enormous amount of money that was being sent out of the country for fruit. Newcastle was the best market in the north for that particular district, and although the railway rates were high, they had still considerable advantage over the Continental producer. He advocated co-operation to meet foreign competition, and in giving advice to intending planters, he said they should only plant such kinds as were known to do well, and not plant too many kinds. He thought the prospects of the fruit cultivator in the north of England, if he recognised his limitations and worked carefully and on business lines, were as good as in any other part of the country.

ORCHARD PESTS.

Mr. F. V. Theobald, M.A., gave a lecture on "Insect and Allied Pests of the Orchard, Bush,



FIG. 142.—MESSRS. GEO. BUNYARD AND CO.'S EXHIBIT AT THE FOUR NORTHERN COUNTIES FRUIT SHOW.

Of early dessert varieties the best are: Beauty of Bath, Mr. Gladstone, and Worcester Pearmain; of late sorts Allington Pippin and Fearn's Pippin succeed well.

Many of the well-known varieties, such as Cellini Pippin, Ecklinville Seedling, Stirling Castle, and Warner's King were very liable to canker in these counties.

Regarding stocks there are three sorts in general cultivation, namely, The Crab, free stock, and Paradise.

Generally speaking, only the two latter are in use. The stock influences the character of the tree to a considerable extent. It is well known that varieties worked on the Paradise stocks come into bearing very early. This is probably owing to the fibrous nature of the roots, the free stocks are not got into this condition until root pruning has been practised two or three times. On the contrary the Paradise stock is not so long-lived as the free stock, probably owing to the fact that the stock does not swell proportionately with the tree trunk; the latter consequently sickens and dies, as it seems incapable of getting sufficient nourishment.

If a large piece of ground is to be planted with Apples half the number of trees should be on the Paradise stock and half on the free stock.

They should be interplanted at distances of 12 feet. Alternating with these should be the bush fruits. After several years, those on the Paradise stocks will deteriorate, and they will then have to be taken out, thus giving more

some fertiliser in May and June, but no tree should be mulched that is not bearing a crop, as this tends to make the trees run to wood and prevents the formation of fruit buds. Excess of growth must be prevented by root-pruning in November, and useless shoots should be removed in August—standard trees must not be root-pruned. Choice Apples should be grown on walls as Espaliers or Cordons care being taken to leave an open space next the stem of not less than 3 feet and to keep this space hard, only forking the surface over 4 inches deep.

Pears that should succeed as open bushes or pyramids are Hessele, Crawford, Williams's Bon Chrétien, Doyenné Boussoch, Louise Bonne de Jersey, Comte de Lamy, Beurré d'Amanlis, Colmar d'Ete and Conference; while Jargonelle will succeed as a standard as well as the two first-named varieties. Choice Pears should all be grown on walls either as Espaliers or as Cordons on the Quince stock; special care must be taken (as with Apples on Paradise) to plant them so that the junction of stock and scion is 3 inches below the surface. Such trees as are carrying crops should be watered with liquid manure.

Never plant fruit trees too deeply. Most kinds on free stocks are worked about 7 inches from the soil, and this "leg" should always appear full length above the soil.

It is essential to keep the land free from grass or weeds, hoeing the surface over frequently to let in the sun and air.

Occasional dressings of lime, soot and guano

and Hot-house Fruits." The lecture was illustrated with lantern slides. The two first subjects dealt with were the winter moth and the Codlin moth. Mr. Theobald briefly related their life histories, and explained the best methods of combating them. The Pear slug-worm and the Ermine moth were then illustrated and referred to in a similar manner. Other pests described were aphides, woolly aphis or American blight, the Pear midge, and Raspberry beetle.

SMUDGE FIRES IN ORCHARDS.

The next paper was one upon "Smudge Fires or Orchard Heating in the United States and Elsewhere," by Mr. H. Hogbin, of the Colorado Orchard Heater Company. The lecturer described experiments made in the Colorado fruit orchards with a view to preserving the blossoms from the effects of spring frosts, and said that it was not enough to have mere smudge fires for the production of smoke, but that better results were obtained by a system of heating the atmosphere of the orchards by the use of the orchard heaters or similar means.

EFFECTS OF SPRING COLD ON FRUIT TREES.

Mr. S. T. Parkinson, B.Sc., read the following paper on the "Effects of Spring Cold on Fruit Trees."

Various methods have been tried in the attempt to save plants from the effects of spring frost, but two only appear to have met with any reasonable amount of success. One consists in the application of irrigation, the other in the use of heating devices. In respect of the latter I desire to say a few words with regard to various experiments generally referred to as "smudging." It should be observed that investigators have approached the subject with *two* distinct ideas in mind:—

- (1) To prevent the plant getting cold.
- (2) To prevent a sudden thawing of the cooled plant tissues.

It is obvious that the second method can only succeed where the tissues have not been actually destroyed by the cold, and must fail after a very severe frost. Experiments I have carried out by means of artificial frosts and gradual thawing have convinced me that *cold itself* is responsible for the death of the plant in many cases. Still, that the method is effective in restoring certain plants in cold weather is well known.

Thus, turning the hose on Potatoes and Tomatoes before the sun rises is a recognised way of trying to save them from the effect of a spring frost. Again, covering Peas and Beans when they are stiff after a cold night, and before the sun gets on to them, is often resorted to.

Professor Sorauer draws attention to the fact that parts of a frozen leaf touched with a warm hand, and thus rapidly thawed, will often perish, although portions not so touched, and thawed will survive. Experiments made by Prof. Muller-Thurgau (1886) and Prof. Molisch (1897) indicate that sudden thawing does *not* as a rule produce injurious effects; yet the latter mentions that *Apples* and *Pears*, some of the very plants we are interested in, and also the leaves of the *Agave americana*, remained alive after moderate freezing (if gradually thawed), but *died* when thawing was rapid. I may have given undue prominence to this point, but I do so because there seems a tendency just now to overlook it. Although the subject has come to the front in this country during the last few years, it may be well to remember that the process of smudging is a very old one. Theophrastus seems to be the first author that refers to it (lib. 5, cap. xx.). Pliny, nearly 2,000 years ago, advocated the use of bonfires of chaff or weeds to manufacture artificial clouds. Boussingault mentions that the Incas of Peru used fires of wet straw to save their Maize long before the invasion of S. America by the Spaniards. Olivier de Serres tried to prove its effectiveness in 1639, and it was revived again by Hogstrom in 1757.

In these days, when we have a Destructive Insect and Pest Act and the subject of State Legislation is so much to the fore, it is interesting to read that, at the close of the 18th century a sort of ordinance existed in Wurtemberg, which provided for co-operation in the kindling of smoke fires when there was danger of frost injuring the vineyards.

In considering the question of smudging we must note the object underlying the experiment. In *all* cases, whether smoke smudges or fires only are used, the fundamental idea is to prevent the plant from cooling.

To accomplish this:—

(1) Heat alone may be mainly relied on. This is the case with such devices as the Colorado orchard heaters.

(2) Or we make use of heat plus water vapour, as when damp shavings or hedge-clippings are used. The vapour itself in this case preventing loss of heat.

(3) Or heat and a dense, dry smoke may be tried. In this latter case, direct heat from the flame itself plays a somewhat subordinate part in the process, the cloud or blanket of smoke being the chief thing. The effect relied on is not so much the direct heat from the fire as the effect of the smoke-cloud or blanket, which has a double part to play. It prevents excessive cooling in the night and too sudden thawing at sunrise. This method is illustrated in the use of such pots as those tried by Messrs. Hooper and Martin, and described in the *Journal* of the Board of Agriculture for April 10, 1907.

So far as my experience goes, this method has two or three disadvantages which make it well-nigh impossible for general use:—

First: In the case of a really severe frost the temperature in the smudged area is not raised sufficiently above the rest.

Second: It is very difficult to keep the cloud still. Even on a very quiet night the smoke will drift away if there is the slightest air-current, and there always seems to be one on sloping ground and down a valley.

Third: After burning some time the smoke tends to issue from the pots in less dense clouds and to ascend perpendicularly. This is especially the case where the trees are small and do not hold the smoke.

Fourth: It is a very *messy* job; the trees and bushes become covered with oily, black smuts, and it is unpopular with the neighbours. On an absolutely calm night, on level, low-lying ground, in an isolated place, I believe it would be successful.

Heat and Water vapour.—A smudge made of damp materials adds moisture to the air. Smudges of damp straw, wood, and hedge-clippings should, if accompanied by sufficient heat, be better than dry heat alone, because, in addition to smoke, they add water-vapour, which helps to prevent loss of heat by radiation and evaporation. Again, the vapour meeting cold air or coming into contact with the cold surface of the plant or ground condenses and sets free heat which is of use in preventing an excessive cooling. On the other hand, when the sun rises, the condensed water turns back into vapour, and helps to prevent a too sudden heating.

The first method, that of applying heat pure and simple, is illustrated in such appliances as the Colorado orchard heaters. My own experiments with such methods have not been successful in raising the temperature to the extent required. I have tried charcoal stoves, and also the coal pots, and have been somewhat disappointed in both. At the same time I must admit that conditions, both as regards the places worked in and climatic conditions, were not ideal. There seems to be no doubt that, given favourable conditions, a considerable rise of temperature ensues.

The most satisfactory account of a smudging experiment is the report of the Riverside Horticultural Club. This takes us back to 1897. The report says: "Under certain conditions we are convinced it may be a valuable means of protection. We think this especially true in localities where the temperature falls only a little below the danger point."

Professor Howard, of Missouri University, in the *Rural Pacific Press* of April 16 of this year, writing about oil and coal pots (the heat-alone method) says: "Beginning with the spring of 1907, the use of oil and coal for heating orchards of Apples and other deciduous fruits has become very popular in Colorado. . . . By the use of orchard heaters, burning either coal or crude oil, it is claimed that the temperature can be raised 8, 10, or even 12°. To accomplish such results it is necessary to use the burners at the rate of 100 to the acre, and to heat large areas at the same time. . . . the fruit-growers united and combated the elements all night for five

nights, and every newspaper reader is familiar with the details of their brilliant success in saving their crop of Apples, amounting to almost 4,000 cars."

The latest pamphlet on the subject is the *Farmers' Bulletin*, No. 401, U.S. Dept. of Agriculture, published last June. It describes, in detail, experiments in orchards of the N.W. Pacific. In the introduction we read: "Notwithstanding the favourable results obtained, it must be acknowledged that there is still considerable doubt as to the possibility (under varied conditions) of warding off the damage from frosts by fires, and also some question about its practicability in open orchards."

Finally, I would mention three unalterable factors which make smudging an uncertain process:—

- (1) The great "streakiness" of the frost.
- (2) The excessive lowness of the temperature at times.

(3) Even if smudging, performed at considerable cost, is effectual in saving the crop from frost damage, there are other meteorological conditions in connection with cold weather which may affect the crop at seasons of low temperature.

I consider the question of the effectiveness of smudge fires to be as yet unproven. I do not doubt that fruit can be saved by this means, but I consider that our knowledge of the subject is very unsatisfactory, and that (if we are to hope to apply the process with any certainty of result) we need further experiments. My opinion is that such experiments, properly carried out, would be of value to the fruit-growers of the country in throwing light, not only upon the effectiveness of smudging, but on other conditions that cause damage in cold weather.

In conclusion, I offer a few remarks which suggest other methods by which frost damage might be minimised:—

- (1) Care in selecting varieties of plants known to suit the locality, with special reference to their cold-resisting capacity.

- (2) The breeding of varieties resistant to cold.

(3) The thorough study of the temperature and air currents on any piece of ground where fruit-planting is contemplated. The behaviour of the grass or any crops already on it should be noticed, also its position as regards slopes, water and air currents. Over a particular farm there are always patches that are warmer than others and patches that are liable to frost. An intelligently-thought-out plan of laying out the ground may often save much loss.

(4) Air drainage. The cutting down of a hedge halfway down some slope, for example, might cause a drainage away of cold, stagnant air which accumulates during a frost.

In opening the discussion which followed the reading of the papers, Mr. Gray, M.A., of the Armstrong College, Newcastle-on-Tyne, drew attention to the principles upon which attempts to deal with insect pests are based—especially pressing home the need for recognition of the mode of feeding of the insects to be dealt with, whether they bite the leaves or whether they suck the sap, and the need for an accurate knowledge of the details of their habits and life histories. He disclaimed any practical acquaintance with methods of protection from frost in orchards by means of heaters, &c., as did Mr. Chittenden, of Wisley. Mr. Chittenden emphasised the remarks made by Mr. Parkinson as to the great variations in temperatures recorded at the same time in places only a few yards apart, where the conditions were apparently very similar, and as to the many troubles often attributed to frost which were in reality due to other causes altogether, namely, the brown-rot fungus, or the Apple Psylla, and unsuitable weather conditions. Mr. Chittenden said that in his experience it was better to use caustic alkali sprays as late in the season as possible, for he had found that then almost all the nearly-hatched eggs of aphides were killed. Mr. Theobald had said that lime and salt applied in the winter delayed or prevented the hatching of the eggs of aphides, and in the same way he had found that a similar application delayed the hatching of the eggs of the Apple sucker (*Psylla mali*) that no practicable wash seemed to kill, though nicotine washes were deadly to the insects when hatched if they reached them. He inquired whether Mr. Theobald had found the

spreading of Kainit beneath Pear trees useful as a means of dealing with Pear midges.

Mr. Britten, who followed, said that the Apple sucker was very rarely seen in orchards in the district, though the Plum sucker was very common. He had also noted that the Plum sawfly had appeared in the past season, and considered that American blight, which was very common on Apples, could not be stamped out, as it fed freely upon the Wild Crabs so numerous in the hedges. In the same way, the Gooseberry sawfly was spreading, in spite of the efforts of gardeners to check it, for it fed on wild plants. He commented on the prevalence of an insect boring into the flesh of Apples this season, tunnelling it in all directions, which he considered was probably *Ragoletis pomonella*.

Mr. Theobald, in reply, said that the use of Kainit under trees was fatal to a large number of the Pear midge larvae, provided it was spread sufficiently early, but in his experience the dressing of Kainit had a bad effect upon the growth of the trees in the succeeding year. He regretted to hear of what appeared to be an attack of the American pest *Ragoletis*, for he knew of no well-authenticated report of its previous occurrence as a pest in this country, though its work was often apparent in imported fruits.

NATIONAL FRUIT-GROWERS' FEDERATION.

A meeting of the National Fruit-Growers' Federation was held at Hexham during the Fruit Congress (October 22), and exhibition held under the auspices of the Four Northern Counties. Mr. C. H. Hooper, in opening the proceedings, said that the Federation was anxious to enlist the northern fruit-growers as members. Most of the present members were from southern counties, but the objects of the Federation should commend it to those in all parts of the country interested in the commercial welfare of fruit-growing. Fruit-growing countries such as the different provinces of Canada and Australia had strong associations looking after the welfare of the industry.

Mr. W. Miskin (secretary) said that the Federation was formed in 1902 by a few prominent fruit growers. Its objects were:—

To create a permanent Central Organisation representative of the fruit-growers, market-gardeners, and others interested in fruit-growing in the United Kingdom, for the promotion of their common interests as a whole, while reserving perfect local liberty of action to the constituent members.

To promote, support, or oppose legislative or other measures affecting the fruit growing industry.

The collection and dissemination of statistical and other information relating to the fruit growing industry.

To prevent, by every possible means, the granting by Railway Companies of preferential rates and facilities for the carriage of foreign fruit and market-garden produce.

To secure quicker means of transit and facilities from Railway Companies, and consider complaints which are likely to be ignored by Companies when made by individual growers.

To prevent jams and other preserves made of foreign fruit being sold by misdescription.

To affiliate with any other kindred society or societies.

To assist such societies in the organisation of meetings of a business or educational character. To assist in the formation of local Societies and to give them as far as possible the full benefits of the Federation.

The doing of all such things as may be conducive to the prosperity of fruit-growers and market-gardeners, such as urging upon the Government the necessity of putting into force the first recommendation of the Departmental Committee of the Board of Agriculture on Fruit-growing, namely, "That a special sub-department of the Board of Agriculture be established to deal with matters connected with the fruit industry."

At present, said Mr. Miskin, the Federation is not adequately represented in the northern counties, and I hope this congress may be the means of increasing our membership. It is absolutely essential for the welfare of the industry that there should be some central body to deal with matters of general, as opposed to those of merely local importance.

Mr. W. Fearnside, Pershore, said that he hoped that the recommendation with respect to a sub-department of Horticulture, would be pressed forward by the Federation. This country was far behind our Colonies and foreign countries in collecting information as to the methods of grading, packing and distributing fruit. On Thursday they had at Pershore a deputation from Japan, who are here for the purpose of studying English methods of co-operation and organisation in agriculture, and he would suggest that the Federation should urge that special commissions be sent to our Colonies and foreign countries that have specialised in co-operation and organisation to study their methods. The Federation

had a very influential and hard-working committee, and he (Mr. Fearnside) hoped the growers in the northern counties would give them their strong support.

Mr. W. Lawrenson, of Eaglescliffe, South Durham, laid stress on the importance to the nation of horticulture, and the desirability of having a special Board of Horticulture to look after its interests. As an example of what horticulture is capable of doing, he reminded his hearers that Mr. Reckard bought a 50-acre field in Hertfordshire, which would be only a small part of a farm, yet this 50 acres, now largely covered with glass-houses, employs 500 men.

BRITISH GARDENERS' ASSOCIATION.

On the last day of the Fruit Show at Hexham (October 22), opportunity was taken to hold a meeting of this association. Mr. W. B. Little presided, the principal speaker being Mr. W. Hall, of Sunderland.

Mr. Hall said that there were several tests, by which a man who claimed to be a practical gardener could be proved, such as a proper manipulation of tools or the cultivation of plants under various conditions. Examinations such as are held by the R.H.S. have no value as a practical test of a knowledge of gardening. He asked if nurserymen or employers sought out men holding such certificates. It is necessary for gardeners to combine for their common good and to seek to raise the status of a gardener.

Mr. Hall said all gardeners should join together for mutual help in matters pertaining to their profession, and there was room in the British Gardeners' Association for men of all shades of opinion.

INTERNATIONAL HORTICULTURAL EXHIBITION, 1912.

OCTOBER 25.

A MEETING of the provincial secretaries appointed by the Executive Committee of the International Horticultural Exhibition took place at the R.H.S. Hall on the 25th ult.

Opening the proceedings, the chairman thanked the representatives for attending in such large numbers, and said that the business before them was to consider the resolutions passed by the Executive Committee at a meeting held on Tuesday, June 14, and to make recommendations thereon. These resolutions were:—

(1) The country be divided into Territorial District Committees, making individual counties into separate districts where their importance justifies it.

(2) Presidents and hon. secretaries be appointed. The hon. secretaries to be consulted as to the appointment of local committees proposed to consist of about 10 members. The list of names on the local committees to be submitted to the Executive Committee for approval, and names to be aided by the Executive where desirable.

(3) The duties which local committees shall be invited to undertake shall be clearly defined, viz., getting exhibitors, guarantors, and subscribers, and making known in their respective districts that an international exhibition will be held in London in 1912; also that local committees shall be invited to make recommendations to suit local conditions.

(4) That every president and secretary of a local committee should have a ticket for the opening two-guinea day; that members and local committees should have one ticket each.

(5) That the local hon. secretaries should be invited to London to meet the Executive Committee to consider and discuss a common course of action. The third-class railway fares to be paid by the exhibition if requested.

(6) That Scotland, Ireland and Wales should have a committee each to organise their respective countries.

(7) That members of the general committee be appointed members of the local committees of their respective districts. At a later meeting, it was resolved that each hon. sec. should be styled the local representative of the Executive Committee.

The earnest wish of the Executive Committee, the chairman said, was to carry the provinces

with them, and make this exhibition one for the whole of the United Kingdom, and one in which everyone connected with horticulture might personally feel interested. On the question of making the exhibition known, he mentioned that posters were being prepared to be exhibited at local shows, and local secretaries were to be asked to have paragraphs and similar announcements inserted from time to time in newspapers circulating in their respective districts. The question of the tickets of admission was one on which the Executive desired the opinion of the local secretaries. So far as the disbursements were concerned, the Exhibition Committee would be willing to pay all proper disbursements of the local secretaries and certain other items authorised at headquarters.

A discussion followed the programme laid down by the chairman. Ultimately, Mr. Edwin Molyneux proposed that there should be a committee for each county, and with regard to the chairman or president of each particular committee, that the name proposed should be submitted to the Executive before appointment.

Mr. Hudson seconded, and this was carried unanimously.

The chairman said that it had been suggested that the chairman and secretary should send a list of names to be formed as a local committee, not necessarily ten, which was a tentative number; and with reference to Scotland, that that country be divided into two districts.

Mr. James Whitton suggested that a public meeting should be held in Glasgow, at which the chairman of this meeting or some other representative of the Executive Committee should attend. Such a meeting would meet very considerable interest in the exhibition.

The chairman thought this a valuable suggestion, and one that should be acted upon.

It was also decided that the tickets to be granted in recognition of services rendered should not be accounted as commission, the services of the local committees and officials being regarded as voluntary. The meeting further recommended that the railway fares of provincial secretaries attending meetings should be paid within a reasonable limit, this motion being proposed by Mr. W. P. Wright and seconded by Mr. Foster.

The chairman intimated that the opinions expressed would be submitted to and considered by the Executive Committee. The meeting then adjourned.

GENERAL COMMITTEE.

Below is a list of those present at the meeting of the General Committee. The proceedings were reported last week:

I. Abercromby Alexander.	P. O. Knowles.
J. Backhouse.	Edward Linton.
W. G. Baker.	Stuart Low.
N. F. Barnes.	R. Irwin Lynch.
J. Rudolph Barr.	George Macrae.
W. J. Benn.	Donald McDonald.
*Edwin Beckett.	F. J. McLeod.
W. A. Biney.	E. Moynan.
Peter Blair.	Harry Mount.
A. T. Bockawen.	George Munro.
A. Bullock.	C. G. A. Nix.
Edward A. Bunyard.	R. C. Notcutt.
T. Chalton.	James O'Brien.
J. Charlesworth.	W. H. Page.
Joseph Cheal.	A. W. Paul.
Fred. J. Chittenden.	*Geo. Paul.
T. H. Cook.	*C. Harman Payne.
W. F. Cooling.	R. Hooper Pearson.
Thomas Coomber.	Rev. Joseph H. Pemberton.
William Cramp.	F. Perkins.
Charles H. Curtis.	W. W. Pettigrew.
*William Cuthbertson.	Spencer Pickering, F.R.S.
J. Cypher.	E. G. Quick.
Alexander Dean.	H. Somers Rivers.
J. Harrison Dick.	*Sir Albert K. Rolitt.
W. H. Divers.	F. Sander.
Chas. T. Drury.	T. W. Sanders.
C. Engelmann.	J. Schneider.
Reginald Farrer.	Ronald S. Skelton (Assist. Secretary).
*C. R. Fielder.	J. L. Standa.
Charles Foster.	Thomas Turton.
*J. Gurney Fowler (Chairman).	*Arthur W. Sutton.
Jas. Gibson.	Leonard Sutton.
W. Goring.	Owen Thomas.
P. Anderson Grahame.	W. P. Thomson.
*John Green.	*A. Turner.
William Hales.	William Fyfe.
Fred W. Harvey.	Dr. J. T. L. Van Ryn.
E. F. Hawes.	*Harry J. Veitch.
Prof. W. Botting Hemsley, F.R.S.	Jas. Vert.
Arthur W. Hill, M.A.	P. C. M. Veitch.
T. Hobday.	Bailey Wadds.
*Jas. Hudson.	F. G. Waterer.
Geo. J. Ingram.	R. G. Waterman.
Rev. Joseph Jacob.	W. Watson.
J. Jaques.	J. G. Weston.
W. J. Jefferies.	Edward White (Hon. Sec.).
John Jennings.	Jas. Whitton.
Dr. F. Keeble, M.A.	Horace J. Wright.
	W. P. Wright.

Members of Executive Committee.

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

OCTOBER 25.—*Present:* Rev. Prof. Henslow, M.A., V.M.H. (in the Chair); and Messrs. W. Cuthbertson, C. T. Drury, A. W. Hill, A. Worsley, W. Hales, R. Hooper Pearson, J. T. Bennett-Poe, E. A. Bowles, Drs. A. Voelcker and F. W. Keeble, and F. J. Chittenden (hon. sec.).

Malformed Orchids.—Mr. E. A. BOWLES showed two malformed Orchids, a *Dendrobium* and a *Cattleya*, both showing doubling of some of their parts. They were referred to Mr. Lionel Crawshaw for examination and report.

Fodder plant.—Dr. A. VOELCKER showed the basal part of a plant used in Mexico as food for cattle. The portion shown consisted of the overlapping basal portions of the leaves, their upper parts having been removed, and the axis from which they had sprung. The mass measured about 12 inches in diameter and was about 10 inches deep. The leaves are exceedingly glossy and hard. The mass is broken up with a chopper and fed to cattle, which devour it greedily. It contains about 2 per cent. of cane sugar. It is apparently from a species of *Hechtia* and belongs to the Bromeliaceae.

Nerine crosses.—Mr. A. WORSLEY showed a spike of *Nerine* × *Haylockii* to illustrate the fact that reciprocal crosses are not always of precisely the same nature. *N. Mansellii* is the result of the reciprocal cross in this case, but it differs in colour from *N. Haylockii*. Dr. KEEBLE pointed out that such differences may arise because the pollen may not carry the chromoplasts. In addition to this, it is not certain that the same forms of the species were used in the making of both crosses, and if different forms were used the result would naturally be different.

Fertility of "green" Wallflower.—Prof. HENSLAW said that he found the fruits of this plant to contain numerous fertile seeds, but he had not been able to satisfy himself that the supernumerary carpels formed in place of stamens produced good seed.

Fasciation in Rose.—Mr. W. PATTERSON sent a fasciated branch of *Rose* from St. Vincent, W.I. He remarked that it had been taken from a bush which had been severely cut back. He thought fasciation was somewhat rare in *Roses* as compared with many other plants.

Pear with lateral proliferation.—Mr. ROGERS, of Falmouth, sent a *Pear* which had produced a bud upon its side. This malformation is rather common and is due to the fact that the fleshy part of the *Pear* is a stem structure.

Macaranga saccifera.—Messrs. VEITCH exhibited, on behalf of M. LOUIS GENTIL, a plant of *Macaranga saccifera*, a native of the Congo district, belonging to the Euphorbiaceae, and possessing very curious saccate growths of the nature of stipules, a pair at the base of each leaf. The Committee, on the proposal of Mr. BOWLES, seconded by Mr. HALES, unanimously recommended the award of a Botanical Certificate.

Plant breeding, &c.—The Rev. Prof. HENSLAW made some remarks upon the Mendelian phenomenon of segregation. He first drew attention to the fact that dissociation of the characters of the parent plants crossed—when the dominant offspring (F_1) was self fertilised and bore offsprings usually like each parent (F_2)—often appeared in the first cross, so that this (F_1) was intermediate in characters, as of that of *Primula sinensis* "Crimson King," with a white (Star) "Lady" variety (Bateson's *Mendel's Principles of Heredity*, pl. vi.). Mendel's dissociations appear to be a previously unknown instance. Prof. HENSLAW gave as examples among hybrids the two species of *Petunia* with a purple or violet and white flower respectively, the offspring of which are mostly striped. *Cytisus Adami* is another case. Of crosses with floral or fruit dissociations he mentioned *Azalea indica*, the York and Lancaster *Rose*, *Sweet Williams*, *Chrysanthemums*, *Orchids*, &c., and the fruit of *Red and White Currants*. Another cause of dissociation arose when naturally compound colours as orange and purple are crossed with a white variety. Thus the orange *Abutilon Darwinii* and *Rhododendron javanicum* have supplied reds and yellows. Now the question arises—When one parent is quite

divisible and recessive in F_1 , why is the other dominant? Judging from the examples given in Mr. Bateson's work, the answer is that the dominant characters are mostly, if not always, those representing the original specific type. Thus tallness of stems, round and yellow Peas, are dominant in the kitchen *Pea*. The purple and flat standards of the *Sweet Pea* are specific and dominant. In fruits, the normal and prickly forms of *Ranunculus arvensis* and of *Datura* are dominant. If, therefore, the species be known as the earliest varieties, such may be expected to supply the dominant characters.

He then read the following note on the influence of starvation on sex. In the note on this subject, read September 30, it was mentioned that in one of the 3-inch pots there were 73 seedlings of *Mercurialis annua*. Of these, 39 proved to be males and 10 females on August 20. All these were removed. Of the 24 left, 14 bore female flowers by September 23. Of the remaining 10, seven more proved to be also females by October 30. The three remaining died. Hence, the 24, when not crowded, developed only female flowers. In another experiment with a 6-inch pot there were 45 seedlings. Of these, 27 were males and 18 females, i.e., in the proportion of three to two. These plants grew much taller than in the smaller pots, the males being from 9 inches to 12 inches high, the females from 4 inches to 6 inches, whereas in the 3-inch pot they flowered when only about 4 inches.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

OCTOBER 20.—*Committee present:* E. Ashworth, Esq. (Chairman), and Messrs. Arthur, R. Ashworth, Ashton, Chapman, Cowan, Crombleholme, Cypher, Holmes, Holden, Keeling, Lee, Parker, Smith, Stevens, Shill, Sander, Thorp, Ward, and Weathers (hon. sec.).

The outstanding feature of this meeting was a display made by Mr. O. O. WRIGLEY, of Bury. It was composed of masses of *Odontoglossum grande*, *Vanda cœrulea*, *Dendrobium Phalaenopsis* var. *Schroderiana*, *Cypripedium Fairrieanum*, and *C. × Maudiae*. A Gold Medal was awarded to Mr. Rogers, the gardener.

W. R. LEE, Esq., Heywood (gr. Mr. Woodhouse), staged a charming group of choice plants, which included two good forms of *Odontoglossum crispum* var. *Xanthotes*. *Cypripedium × King George V.*, a new hybrid, the parentage of which is not recorded, was voted a First-class Certificate, and Awards of Merit were given to *Cypripedium × Hermes* (Euryades × *Leeanum*) and *C. × San-ac-dere* Plumpton Hall var., a similar award being granted to *Lælio-Cattleya × Black Prince*, a cross between *L.-C. × Bletchleyensis* and *C. × Hardyana*.

Mr. A. J. KEELING, Bradford, received an Award of Merit for *Cypripedium × San-Luce*, a pretty form between two yellow types of *C.* insigne.

R. ASHWORTH, Esq., Newchurch (gr. Mr. Gilden), staged a bright group of plants, for which a Silver Medal was awarded. *Cattleya labiata* var. Mrs. R. Ashworth, an albino form, received an Award of Merit.

Mrs. A. K. WOOD, Glossop (gr. Mr. Gould), exhibited a few seedling *Cypripediums* raised from the same seed pod, all varying in character.

F. A. HINDLEY, Esq., Gt. Horton, Bradford, was awarded a Bronze Medal for a small group of miscellaneous plants. A distinct form of *Cattleya × Iris* was noticed, also a pretty form of *Cypripedium Fairrieanum*.

W. THOMPSON, Esq., Stone (gr. Mr. Stevens), exhibited a few good *Cypripediums*: *C. rubens* (*C. × Harrisianum × C. Germain Opox*) and *C. × Lord Ossulston* Walton Grange var. received Awards of Merit.

The Rev. J. CROMBLEHOLME, Clayton-le-Moors, exhibited a distinct *Cypripedium* named *C. Mortenii* (*C. × Leeanum × C. Chamberlainianum*).

J. J. HOLDEN, Esq., Southport (gr. Mr. Johnson), exhibited the beautiful and well-known *Cattleya × "Countess of Derby,"* to which a Silver Medal was awarded. It was pleasing to find this beautiful Orchid in such a flourishing condition; the flower-spikes bore five fully-developed blooms.

Messrs. J. CYPHER & SONS, Cheltenham, were

awarded a Silver Medal for a good display of popular species and hybrids; prominent in the group were several distinct forms of *Dendrobium Phalaenopsis Schroderianum*.

Mr. E. V. Low, Vale Bridge, was awarded a Silver Medal for a choice collection of plants, which included white forms of *Cattleya labiata* and the rare *Odontoglossum grande* var. *aureum*.

Other exhibitors were Messrs. HARTLAND, Cork, J. ROBSON, Altrincham, KEELING & SONS, Bradford, J. BIRCHENALL, Alderley Edge, and the LIVERPOOL ORCHID NURSERY CO. L. W.

CROYDON CHRYSANTHEMUM.

OCTOBER 27, 28.—The 22nd annual show of the above Society was held in the hall at the Adult School, Park Lane, Croydon, on the above dates. The exhibition brought together a good display of Japanese and Incurved varieties of great merit.

A challenge cup was offered in the open class for 30 cut blooms of Japanese varieties, distinct, shown with *Chrysanthemum* foliage, in six vases, of five blooms each. The challenge cup is offered on the condition that at least three entries are staged, but there were only two exhibits on this occasion. The 1st prize was awarded to NEWTON MAPPIN, Esq., Headley Park, Epsom (gr. Mr. T. Beeson). His varieties were *Valerie Greenham*, F. S. Vallis, Mrs. L. Thorn, Mrs. H. Knox, G. Mileham, Mme. G. Rivol, *Rose Pockett*, *Lady Talbot*, *Mary Inglis*, *Splendour*, *Geo. Terry*, *Pockett's Crimson*, *Reginald Vallis* (the premier Japanese bloom in the show), *Sir Frank Crisp*, *Master James*, *Mrs. C. H. Totty*, *Hon. Mrs. Lopes*, Mrs. R. H. Pearson, *Algernon Davis*, *Bessie Godfrey*, *Miss Hilda Rowley*, Mrs. G. Mileham, *John Peed*, *Walter Jenks*, *Miss Ellie Greene*, Mrs. R. H. B. Marsham, *Mrs. Norman Davis*, Mrs. A. T. Miller, *Miss E. Smith*, Mme. P. Radaelli, all of them finely developed and in perfect condition. 2nd, Exors. of the late Lady ASHBURTON, Melchet Court, Romsey (gr. Mr. Geo. Hall), who showed excellent blooms of Mme. P. Radaelli, *Edith Smith*, *John Peed*, *Mary Mason*, Mrs. A. H. Lee, *Marquis of Northampton*, *Algernon Davis*, and others.

In the class for 15 cut blooms of three Japanese varieties, to be shown in three vases, the 1st prize was awarded to Mr. NEWTON MAPPIN, for grand blooms of *Lady Talbot*, *Reginald Vallis*, and Mrs. A. T. Miller; 2nd, Lady ASHBURTON's Executors, with *Edith Smith* and *Lady Talbot* as the best; 3rd, E. H. COLES, Esq., Burntwood, Caterham (gr. Mr. C. Lane), who had blooms of smaller size, those of Mrs. A. T. Miller and Mrs. W. Knox being the finest specimens.

A class was specially arranged for gardeners residing within five miles of the Town Hall, Croydon. It was for 15 cut blooms of Japanese varieties, one or more to be shown in each vase with *Chrysanthemum* foliage. The 1st prize was won by Mr. G. EDWARDS, Windmill Cottage, Shirley. A five-guinea cup, presented by Mr. Alderman Allen, was included in the 1st prize.

There was also a class for local amateurs. This was for 10 Japanese blooms, in not fewer than two distinct varieties. The 1st prize was awarded to Mr. H. E. MARDEN, Godstone Road; 2nd, Mr. W. PHILPOT, 57, Church Street, Croydon, who had fine examples of *Rose Pockett*, *Lady Talbot*, and Mrs. G. Mileham.

The best group of *Chrysanthemums* was staged by A. E. CROOK, Esq., Selbourne Road (gr. Mr. Tyrrell); 2nd, E. WOOD, Esq., Church Road, Upper Norwood (gr. Mr. A. Dyer).

Prizes were offered for five blooms of incurved varieties; the winner of the 1st prize, Lady ASHBURTON's Executors, showed fine examples of *Romance*, Mrs. C. Crooks, W. Biddle and *Triomphe de Montbrun*; a flower of *Romance* was adjudged as the premier Incurved variety in the show. Mr. T. BEESON was the winner of the 2nd prize in this class.

The vegetables were hardly equal to the displays of some recent years, and the same may be said of the Apples and Pears shown, although several fine exhibits of both were observed. Good bunches of Black Alicante Grapes were shown by Sir W. GREENWELL, Bart., Marden Park (gr. Mr. W. Lintott), who won the 1st prize offered for this variety; Mr. BEESON being placed 2nd.

Trade exhibits were contributed by Mr. T. BUTCHER, Messrs. PEED & SON, West Norwood, and Messrs. WELLS & CO., Merstham.

NEW TRADE SOCIETY.

NOVEMBER 1.

A REPRESENTATIVE meeting of London florists and fruiterers was held at Anderton's Hotel, Fleet Street, E.C., on Tuesday night last, for the purpose of considering a scheme for forming a trade organization for these two branches of retailers. Mr. E. L. Vinden (Fulham Road) presided, and in opening the proceedings, explained the objects of the gathering. It would perhaps be news to most of them, he said, that in the area of greater London there were about 4,200 fruiterers and greengrocers and 2,500 florists, nearly 7,000, with no association for the retailers. With such numbers there must be some grievance and wrongs which required righting; some injustice which needed ending, besides many equalities which should be adjusted. With regard to the local by-laws there were some anomalies which needed serious attention. Probably no one person felt equal to combating these matters alone; what they could not undertake individually they might achieve collectively. At the present time they were face to face with proposed legislation which, if carried into law, would prove extremely unwelcome and irksome to many, and a serious infringement of their liberties. The Shop Hours Bill (No. 2) had been planned by someone whose aims were doubtless lofty and well-meaning. From their practical knowledge of the trade they could furnish many objections and difficulties. It was obvious that the public generally did not recognise the serious difficulties associated with the dealing in perishable goods, such as fruit and flowers. With a view to having their case properly stated representation must be at once made to the Home Secretary. To bring this into effect they must organize. In the matter of organization London was lamentably behind. In the provinces there were associations of retailers which had achieved certain advantages for their members. What had been done in the provinces could be done in London. Why should London wait? He formally moved that the London Retail Fruiterers' and Florists' Association be formed.

Mr. F. D. Mash (Balham) seconded. He stated that he had attended the meetings of the National Federation of Retailers' Associations, and had seen the benefits which had been secured for the trade. The Federation were able to attend before Mr. Churchill as a deputation with greater weight than if they had been merely private individuals.

Mr. J. G. Taylor (City and Hampstead) supported the proposal, as did also Mr. Denton (Kensington), Mr. Walter Brookes, Mr. Looker (Messrs. Henry & Co., Westminster), and Mr. W. B. Shearn (Marylebone).

Mr. W. E. Boyes (President of the National Federated Associations of Fruiterers and Florists) congratulated Mr. Mash and Mr. Vestey (organising secretary) for the success which had attended their efforts in arranging that meeting. He referred to the various questions which the Federation had effectively taken in hand, particularly as regards the charges made for the Strawberry chips. The Federation organised a deputation to wait upon Mr. Churchill respecting the Shop Hours Bill, and pointed out to him the difficulties of treating the fruit trade upon the same footing as other trades. The Home Secretary had granted some important concessions, and had promised to meet the deputation before Parliament assembled.

The proposal to form the Association was adopted. Another meeting is to be called to elect officers and formally approve the rules. Mr. F. D. Mash is acting as Treasurer, and Mr. W. Vestey as Organising Secretary.

On the proposal of Mr. Somers, seconded by Mr. Looker, the following resolution was passed, and a copy ordered to be sent to the Home Secretary:—"That this meeting of retail fruiterers and florists unanimously considers: (1) that the Shop Hours (No. 2) Bill as at present drafted is entirely unworkable and unacceptable to the London traders in fruit and flowers. (2) That any amelioration of the working hours of the shop assistants can better be made by restricting the number of ordinary working hours per week, allowing for reasonable overtime during ten weeks per annum covering the busiest periods, than by the enforced closing of shops."

INTERNATIONAL HORTICULTURAL EXHIBITION AT BRUSSELS.

OCTOBER 29-NOVEMBER 2.

AN exhibition of horticultural products was opened in the grounds of the International Exhibition of Brussels on the 29th ult. This exhibition was promoted under the auspices of the Royales de Flore et Limbree Societies in the place of several others which were abandoned owing to the disastrous fire which occurred some time ago. The display is a magnificent one, and the promoters are to be congratulated.

THE ORCHIDS.

The exhibition of Orchids is one of the most important which has yet taken place in Europe. Nothing like it has yet been seen in Germany, France, or Holland, and it is only equalled in splendour by the Spring Shows of the Royal Horticultural Society in London. The plants occupy nearly 300 square metres. The visitor can traverse this gaily-flowered parterre for a distance of more than 200 metres, and at each step a new marvel is displayed. The exhibitors in this section include, of Belgian amateurs, M. F. LAMBEAU, M. JULES HYE DE CROM, and M. C. DIETRICH. Among professionals, we would mention the names of MM. PEETERS ET FILS, of Laeken, MM. DUCHESNE ET LANTHOINE, of Watermael, MM. COGEN, of Tervueren, MM. VUYLSTEKE, of Loochristy, M. PAUWELS and M. VERDONCK, of Ghent. Among the foreign exhibitors are M. MARON ET FILS, of Brunoy, Messrs. CHARLESWORTH & Co., Sussex, and Messrs. STUART LOW & Co., of Enfield, England.

M. LAMBEAU's collection would make an exhibition in itself. Rarely have so many valuable plants been shown by a single exhibitor. The collection contains a considerable number of albinos. Among the coloured forms, the different tones and shades are infinite.

The exhibit of MM. PEETERS ET FILS, Laeken, is quite as noteworthy, though not quite so large. This old-established firm had not, for some time past, exhibited at Brussels, but they may now be said to have surpassed themselves. I first remarked a beautifully flowered specimen of *Vanda corulea*, with long spikes of blossoms of the most delicate blue. Then there is a collection of beautiful hybrids raised by the exhibitors.

M. DIETRICH, the proprietor of Val Duchesse, is showing some beautiful products. His collection is remarkable for the most excellent culture. A superb *Cattleya* bears about 50 flowers.

M. FR. CLAYS, Etterbeek, has a splendid exhibit of *Cattleya labiata*.

The firm of MM. DUCHESNE ET LANTHOINE are showing a collection of *Cattleya aurea*, and another collection of 100 various Orchids. This lately-established firm is winning an important position in the Orchid world.

The exhibits from the Belgian provinces are not less important than those from Brussels itself. M. PARWITS, Mirelbeke, shows two collections of very beautiful and well-cultivated specimens: M. VERDONCK, the Burgomaster of Gentbrugge, sends a hundred very interesting Orchids; M. JULES HYE DE CROM, an amateur, has only a dozen specimens, but they are 12 gems; M. COGEN, Tervueren, is exhibiting some very beautiful products; and, lastly, M. VUYLSTEKE, Loochristy, shows, in a miniature greenhouse, some superb *Odontoglossums*, with long branches of flowers blotched with the most varied colours.

It is impossible to leave the Orchid section without admiring the *Cattleyas* and *Lælia* hybrids of M. MARON ET FILS, a French nurseryman, who, like the firm of Peeters, exhibits hybrids of his own raising.

The fine plants shown by Messrs. CHARLESWORTH & Co. and Messrs. STUART LOW & Co. were very much admired. These were the only English firms represented in this section.

MISCELLANEOUS FLOWERS.

Chrysanthemums form a striking spectacle in vast masses, and the difference is very noticeable between the original Japanese Chrysanthemum, and the flowers exhibited by M. DUBUIS-SON-FOUBERT, one flower of which measures 45 cm. in diameter. It is an indisputable fact that, at this time of the year, no flower can take the place of the Chrysanthemum, the Orchid, as has been said before, alone excepted. In no other flower is there to be found the same variety of form and colour. Except for blue, they are of all shades, and the forms vary from the little Pom-

pon to the large, dishevelled Japanese flowers, with florets curved, curled and regular. Among Belgian amateurs, the best exhibitor is M. FIRMEN DE SMET, Burgomaster of Vinderhaute, who has a collection of 150 plants. He is closely followed by Mme. THEO. MOREL DE WESTGAVER, who is showing, in conjunction with M. LEON GROSJEAN, a collection of 100 varieties in remarkable specimens.

Among professionals we notice MM. VICTOR VERELLEN ET FILS, of Berchem, who carry off the palm for some really marvellous flowers of excellent culture.

M. LUYCKX, a gardener at Berchem, has a very beautiful collection of 50 varieties. M. BURGER is showing his speciality, the small-flowered *Chrysanthemum* *Baronne de Vinols*.

The plants shown by MM. STEPMAN DE MASSEMAEKER, those of Mme. ISABELLE DE BACKER, and of Major MOREL-JAMAR also deserve mention.

M. DE GOES, of Jette St. Pierre, is showing some very fine flowers. Altogether, so many Chrysanthemums of such good culture have never before been seen at Brussels. When one sees the quantity of flowers crowded into the immense hall of the Cinquantenaire, it can be realised the great part played by the Chrysanthemum in particular at the approach of the Jouvant.

If the vast hall contained nothing but Chrysanthemums, the effect would be very poor, but here and there a fine Palm emerges from their midst, with majestic fronds, which break the monotony of colours. These fine Palms, which are placed amongst the flowers, or decorate a corner, are provided by the two presidents of the Organising Committee, MM. DU PRÉ and F. LAMBEAU. They are magnificent plants.

A gayer note is struck by other flowers, such as the Dahlias of M. SCHOVAERS, of Brussels, and M. RIVOIRE ET FILS, of Lyons; the Violets of M. HEINRICH WREDE, of Luneburg, Germany; the 3,000 Lilies of the Valley of M. HUGO MOLDRICK, of Sudmühle; MM. MENGELS and VANDEN EEDE, of Cappellen; the Gerberas of M. ADNET, of Cap d'Antibes; the Gloxinias of M. DIETRICH; the American Carnations of MM. FERARD, Paris, and Messrs. STUART LOW & Co., London; the Begonias of M. SAMSON JOSSE, of Neufchâteau; the Begonia "Patrie" of M. LAMBEAU; the Cyclamen of MM. MENGELS and VANDEN EEDE; and the flowering Heaths (*Erica hyemalis*) of M. TRAVOUILLOUX, of Tours, France.

We may mention in conclusion the fine collections of plants with coloured leaves, which strike so brilliant a note from the entrance, and give quite a tropical effect in this palace of flowers. These fine plants, with scarlet leaves, are *Dracænas*, of the variety *Père Charon* and *Gentilii*, exhibited by the firm of MM. DRAPS-DEM, of Laeken. A little further on we come to the fine specimen Ferns sent by M. DUQUESNOY, of Ghent; then those of the firm of MM. DURIEZ FRÈRES, of Wondelgem. Pretty specimens of *Phoenix Roebelinii*, with very graceful foliage, are exhibited by M. EUGÈNE DRAPS.

The floricultural section occupies the whole centre of the hall, and this is the first time that it has been attempted in Brussels to fill so great a space with flowering plants.

FRUITS AND VEGETABLES.

Belgium has always been noted for its culture of Apples, and the exhibition of these in the Cinquantenaire is excellent, notwithstanding the unfavourable season. The principal centres of production have sent up very fine and varied collections of Grapes and other fruits, the vine-growers of Hoeyleart, especially, having done wonders. Foreign countries, notably Holland, France, and Germany, have sent competitors from their most important centres of production.

The collections of vegetables are not less important than those of fruit, and here the localities round Malines have scored the greatest triumph. The Dutch market-gardeners have also sent a good collection. These are exhibited in co-operation, under the auspices of the Federation of the Horticultural Societies of the Low Countries. *Correspondent.*

SCHEDULE RECEIVED.

Chester Paxton Society's fruit and Chrysanthemum exhibition, to be held on November 16, 17, in the Town Hall, Chester. Secretary, Mr. G. P. Miln, Grosvenor Mansions, Chester.

National Chrysanthemum Society.

NOVEMBER 2, 3, 4.



CHRYSANTHENUMS are at their best when the summer splendour of the garden is past, and this is one of the chief reasons why they are favourites with all. They have long enjoyed a great popularity as exhibition flowers, and the shows of the National Chrysanthemum Society are always looked forward to with keen interest by gardeners. The show which opened at the Crystal Palace, Sydenham, on Wednesday last, was probably the best since the old Aquarium days. The Japanese blooms were never shown finer, whilst the nurserymen's exhibits surpassed all former occasions. No fewer than 74 novelties were presented for award, and the Society's First-class Certificate was granted to nine of these. The usual competitive classes for vegetables were omitted this year.

The weather on the opening day was fine, and a good number of visitors attended the show. The arrangements were admirable, under the management of the secretary, Mr. R. A. Witty, and his assistant.

GROUP CLASSES.

The first class in the schedule was for a display of cut Chrysanthemums, with suitable subjects of other kinds for relief, arranged in a space of 300 superficial feet. There was only one exhibitor, Mr. FRANK BRAZIER, Caterham, who showed pot plants of Chrysanthemums, and these were not in accordance with the requirements of the schedule.

There were three exhibits in the class for a display of Chrysanthemums arranged with decorative plants on a space of 200 superficial feet. The 1st prize was won, as usual, by Lady TATE, Streatham Common (gr. Mr. W. Howe), who had a fine, circular exhibit, containing large Japanese blooms, decorative varieties, and singles, relieved with Codiums, Retinopora, Aralias, Palms, and Ferns. It was regrettable that the Chrysanthemums were not named. 2nd, J. B. ENO, Esq., Wood Hall, Dulwich (gr. Mr. R. B. Leech), who showed good Chrysanthemums, but too few of them, the exhibit being rather overdone with greenery. 3rd, Sir D. F. GOOCH, Bart., Hylands Park, Chelmsford (gr. Mr. P. Wilkinson), who showed, mainly, single varieties.

An interesting class was the one for 50 plants of Chrysanthemums in pots, as grown for market, and the 1st prize was awarded to a collection of great excellence, the plants being dwarf and with about eight to twelve good blooms each. They were eminently suitable for room decoration or for conservatory and greenhouse stages. The exhibitors were Messrs. BUTLER BROS., Bexley Heath, Kent. The more striking plants were La Pactole, Dazzler (red), Hortus Tolsonus (bronze), W. H. Thorp (white, Incurved), Diane Nonin (white), Westcourt Yellow, and Tapis d'Or. 2nd, Mr. FRANK BRAZIER, Caterham, with the variety Miss Mary Pope predominating.

AFFILIATED SOCIETIES' CLASS.

A special class was provided for societies in affiliation with the National Chrysanthemum Society, but the response was poor, only two societies being represented. These were the DULWICH CHRYSANTHEMUM AND HORTICULTURAL SOCIETY and the REIGATE AND DISTRICT CHRYSANTHEMUM SOCIETY. The former association put up a very excellent exhibit, the blooms being of remarkably good quality and staged most effectively. The 2nd prize was awarded to the exhibit from Reigate, which was also very pleasing. Both exhibits would have been more interesting had the varieties been named.

CUT BLOOMS.

BLOOMS SHOWN ON BOARDS.

INCURVED VARIETIES.—There were three exhibits in the class for 36 blooms of incurved varieties, distinct—three very even displays well up to the average quality. The 1st prize was won by A. TATE, Esq., Downside, Leatherhead (gr. Mr. W. Mease), who arranged his finest specimens along the back row. These were Clara

Wells (a fine rosy-buff flower, one of the choicest specimens in the collection), Edwin Thorp (a white bloom of good form), Godfrey's Eclipse (yellow), Mrs. G. Denys (a large, bluish-tinted flower), Buttercup (of the richest yellow colour), H. W. Thorp (a white variety with large florets), Pantia Ralli, Mrs. J. Bryce, W. Biddle, Mrs. J. Hygate, Emblème Poitevine, and Lady Isabel. Other notable varieties were Mrs. J. Wynne (white), Daisy Southam (yellow), Romance (yellow), Frank Trestrian (bronze), and W. J. Higgs (claret red). 2nd, PANTIA RALLI, Esq., Ashted Park, Leatherhead (gr. Mr. G. J. Hunt), with fine, large blooms, rather less compact in shape than in the preceding group. A selection of the finest blooms includes Duchess of Fife (one of the best of the white varieties), Buttercup, Clara Wells (a grand bloom), Pantia Ralli, Emblème Poitevine, Lady Isabel, Daisy Southam, Godfrey's Eclipse, W. J. Higgs, and Frank Trestrian. 3rd, Miss LANGWORTHY, Gays House, Holyport (gr. Mr. T. J. Brown), with a very bright lot of blooms.

Twelve Incurved blooms, distinct.—There were only three exhibits in this class, but they were all good. The 1st prize was won by Mr. TATE (gr. Mr. W. Mease), who showed a fine dozen blooms in Mrs. G. Denyer, Buttercup, W. J. Higgs, Clara Wells, Emblème Poitevine, H. W. Thorp, Daisy Southam, Lady Isabel, Mrs. J. Wynne, Romance, Mrs. J. P. Bryce, and C. H. Curtis. The 2nd prize was won by PANTIA RALLI, Esq. (gr. Mr. G. J. Hunt), who had very large blooms of Duchess of Fife, Emblème Poitevine, and Clara Wells. 3rd, A. T. MILLER, Esq. (gr. Mr. G. Mileham).

Six Incurved blooms of one variety.—In this class also there were three exhibits, the prizes being awarded to Miss LANGWORTHY, Holyport (gr. Mr. T. J. Brown), Mr. PANTIA RALLI, and Mr. A. T. MILLER in this order for the varieties Romance, Clara Wells and J. W. Higgs respectively.

JAPANESE BLOOMS.

The greatest test of the growers' skill in this section is seen in the large class for 48 blooms of Japanese varieties, distinct. On this occasion there were seven exhibits, all of choice quality. Competition was keen, but the judges had no difficulty in awarding the 1st prize, which was won by E. MOCATTA, Esq., Woburn Place, Addlestone (gr. Mr. T. Stevenson), with blooms of outstanding excellence, being large, fresh and coloured magnificently. The varieties were F. S. Vallis (the largest bloom in the collection), Rose Pockett, Valerie Greenham, Willie Rawlins, Mrs. R. H. B. Marsham, Sir Frank Crisp, W. Iggulden, John Peed, Superbe, Mme. Paola Radaelli, Mrs. L. Thorn, Walter Jinks (a finely tinted bloom), Shanklin, Marquis of Northampton, Purity, Lady Talbot (a companion flower to F. S. Vallis, but of paler yellow), Reginald Vallis, Lady Crisp, Mrs. Norman Davis, W. Mease, Mrs. W. Knox, Mrs. Robert Holmes, Harry Wood (a fine red Chrysanthemum), Mrs. C. Penfold, Evangeline, Buchan Keeling, Algernon Davis, W. A. Etherington, George Hemming, Chrysanthemum Montigny, Master David, W. Gee, Duchess of Sutherland, Miss A. Nichol, O. H. Broomhead, Mrs. A. T. Bott, Pockett's Surprise, Mrs. C. Beckett, Mme. G. Rivol, Master James, Lady Frances Ryder (a seedling), Splendour, Frank Payne, James Lock, Mrs. G. Mileham, J. H. Silsbury, and Hon. Mrs. Lopes. The 2nd and 3rd prize groups were so close in regard to quality as to necessitate pointing, with the result that A. C. HAMMERSLEY, Esq., received 172½ points, and the Executors of LOUISA LADY ASHBURTON, Molechet Court, Romsey (gr. Mr. G. Hall), 172 points. 4th, Mrs. GEO. CLARK, Frensham Road, Farnham (gr. Mr. C. Moore).

PRESIDENT'S CLASS.

A silver cup was offered by the President, Sir Albert Rollit in the class for 24 blooms of Japanese varieties, distinct. This brought five exhibits. Mr. MOCATTA had no difficulty in beating his competitors, his stand of blooms being very choice, and contained exquisite examples of F. S. Vallis, Master James, James Lock, Mme. Paola Radaelli, Hon. Mrs. Lopes, Marquis of Northampton, Purity, Lady Talbot, Reginald Vallis, Lady Crisp, Harry

Wood, Mrs. Geo. Mileham, Superbe, Algernon Davis, Chrysanthemum Montigny, Walter Jinks, Mme. G. Rivol, Mrs. R. H. B. Marsham, Splendour, Frank Payne, Mrs. W. Knox, Lady Frances Ryder, J. H. Silsbury, and Mrs. A. T. Bott. 2nd, Mme. STUART, Convent Gardens, Roehampton (gr. Mr. A. Smith). Outstanding varieties in this exhibit were Mrs. A. T. Miller, Master James, J. W. Molyneux, Lady Talbot, Rose Pockett, J. H. Silsbury, and F. W. Lever. 3rd, Rev. A. E. COOPER, Marsden, Borstaldene, Bickley (gr. Mr. W. Rigby).

Twelve Japanese blooms, distinct.—This proved a well-contested class, no fewer than 12 growers competed. The Ichthemio Guano Company offered a special prize to the exhibitor of the finest blooms. The successful competitor was Mr. MOCATTA (gr. Mr. T. Stevenson), who had a superb dozen in the varieties F. S. Vallis, Master James, Shanklin, Lady Talbot, Reginald Vallis, Lady Crisp, Walter Jinks, Hon. Mrs. Lopes, Superbe, Harry Wood, James Lock, and Mme. G. Rivol; 2nd Mrs. Geo. CLARK (gr. Mr. C. Moore), with bright blooms of Hon. Mrs. Lopes, Pockett's Crimson, Splendour, Mrs. C. Penfold, Mrs. A. T. Miller, and others; 3rd, A. T. MILLER, Esq. (gr. Mr. G. O. Milham); the variety Geo. Hemming, claret and crimson, was conspicuous in this exhibit.

BLOOMS SHOWN IN VASES.

The principal class in this section was for 12 vases of large Japanese blooms of distinct varieties, three blooms in each vase. The exhibits were strikingly handsome, the large blooms being seen to advantage with their stiff stems furnished with foliage. There were four collections, and the 1st prize was awarded to Mr. W. IGGULDEN, Lock's Hill Nurseries, Frome, with 57½ points. This exhibitor showed Mrs. W. Iggulden (yellow), Reginald Vallis, Mme. G. Rivol (yellow, with rose tinting), Mrs. R. H. Marsham (white), Francis Joliffe (yellow and rose), F. S. Vallis (yellow), Mme. P. Radaelli (a fine vase of this grand variety), White Queen, Lady Talbot, Master James, Hon. Mrs. Lopes (a fine shade of yellow), and Algernon Davis (darkest yellow). 2nd, A. C. HAMMERSLEY, Esq., Abney House, Bourne End (gr. Mr. T. Waller), with 56 points. Lady Talbot (sulphur yellow) was shown grandly by Mr. HAMMERSLEY, and others of especial merit were C. H. Totty, W. A. Etherington (blush-pink), Mrs. A. T. Miller, and Leigh Park Wonder (red). 3rd, J. B. HANKEY, Esq., Fetcham Park, Leatherhead (gr. Mr. W. Higgs) who showed a magnificent trio of blooms of the beautiful Mrs. Geo. Mileham variety and another of Mme. P. Radaelli. This exhibitor received 53 points.

INCURVED BLOOMS.—These were arranged on a low table, so that their good points were readily seen. The best of four collections was put up by J. B. HANKEY, Esq. (gr. Mr. W. Higgs), whose blooms were large, well finished, and of good form. They included Mrs. B. HANKEY (silvery-buff), Daisy Southam (dark yellow), Mrs. J. Wynne (white), Mrs. G. Denyer (pink flush on white), Frank Trestrian (apricot), Lady Isabel (palest pink), Buttercup (yellow), Mrs. J. Hygate (cream), Clara Wells (yellow), and J. Agate (white). 2nd, W. A. TATE, Esq. (gr. Mr. W. Mease). 3rd, PANTIA RALLI, Esq. (gr. Mr. G. H. Hunt).

SINGLE VASE CLASSES.

White.—Some remarkable blooms were seen in this class, which was contested by seven exhibitors. The 1st prize was awarded to magnificent specimens of Mrs. A. T. Miller, shown by Mrs. GEO. CLARK (gr. Mr. C. Moore). The 2nd and 3rd prizes were also awarded to this variety, shown by Mrs. McDOWELL NATHAN, Little Heath Wood, Potter's Bar (gr. Mr. W. Newton), and A. T. MILLER, Esq. (gr. Mr. G. Mileham), respectively. The varieties Mrs. R. H. B. Marsham and Mrs. Norman Davis were shown by other exhibitors in this class. **Yellow.**—The best of five vases was also from the gardens of Mrs. Clark, who won easily with huge specimens of Hon. Mrs. Lopes. 2nd, the same variety, shown by Mr. IGGULDEN. 3rd, Mrs. W. Knox, exhibited by Mr. H. J. HEDDER, Kirkdale Nursery, Sydenham.

Any other colour.—Mr. IGGULDEN won the 1st prize in this class with the variety *Mme. Paola Radaelli*. 2nd, Mrs. C. H. Totty, shown by R. H. B. MARSHAM, Esq. (gr. Mr. D. H. Fairweather). 3rd, Reginald Vallis, shown by A. T. MILLER, Esq. There were five exhibits, the other two being of the variety *Reginald Vallis*.

Two or three bunches of Chrysanthemums, double d.—There were two classes for these, one for yellow and bronze varieties and the other for colours other than these. In the yellow class the 1st prize was won by Mr. R. D'ECOURT DAY, The Nursery, Sutton Scotney, Hampshire, with *Lizzie Adeock* and *Nagoya*. In the other class, Mr. PAGE, nurseryman, Broadway, Bexley Heath, won the 1st prize with an assortment, all different, of market sorts, prominent being the green-tinted *Mme. Rogers*.

Anemones and Pompon varieties.—There was only one exhibit of 12 large-flowered *Anemone Chrysanthemums*, Japanese excluded, shown by T. L. BOYD, Esq., North Frith, Tonbridge (gr. Mr. A. C. Horton), who staged *Lady Margaret Thorpe*, *Juno*, *Mrs. Judge Benedict*, *Nouvelle*, *Alveole*, *Mme. Godereau*, and *Gluck*. The 1st prize was awarded. T. L. BOYD, Esq., was also the only exhibitor in the similar class for 12 large-flowered Japanese *Anemone* varieties, and was again awarded the 1st prize.

F. BRABY, Esq., Bushey Lodge, Teddington (gr. Mr. F. Fitzwater), excelled in the class for six vases of *Pompons*, and he also won the 1st prize for six vases of *Anemone Pompons*.

Reflexed blooms.—Miss LANGWORTHY, Gay's House, Holyport (gr. Mr. T. J. Broom), was the only exhibitor of 12 large-flowered reflexed *Chrysanthemums*.

AMATEURS' CLASSES.

The best stand of 12 blooms of Japanese varieties was staged by Rev. A. E. COOPER MARSDEN, Bickley (gr. Mr. W. Rigby), in competition with three other exhibitors. He had excellent blooms of *Lady Talbot*, *Leigh Park Wonder*, *Miss Annie Nicoll*, *Reginald Vallis*, *Mme. G. Rivol*, *Mrs. H. Perkins*, *Rose Pockett*, and others. 2nd, Mrs. LANGTON, Hendon (gr. Mr. C. H. Martin). 3rd, W. H. STONE, Esq., Sydenham (gr. Mr. G. W. Stevens).

B. E. DAVIS, Esq., White Lodge, Biddenden, showed the best exhibit in Mr. Thorp's class for 12 Japanese blooms, distinct, followed by J. KING, Esq., Hendon. Both showed well.

There was good competition in the class for six Japanese varieties, there being 11 exhibits. The 1st prize was awarded to W. M. HEATH, Esq., Woodford; and the 2nd prize to J. KING, Esq., East View, Hendon.

The best six blooms of a Japanese variety were shown by T. WICKHAM JONES, Esq., South Norwood (gr. Mr. L. Gooch), the variety being *F. S. Vallis*. 2nd, Mr. STONE, Sydenham, with *Sir Frank Crisp*.

In the class for 12 incurved varieties, there were two displays, Mr. KING winning the 1st prize with creditable blooms. 2nd, Mr. W. GOODING, Edenbridge, Kent.

C. TODD, Esq., Carshalton (gr. Mr. H. W. Edwards), had the best six incurved blooms of one variety, *Clara Wells*. 2nd, E. WOOD, Esq., Upper Norwood, with *Lady Isabel*.

For three vases of *Pompons*, P. DAWSON, Esq., Sydenham (gr. Mr. G. Bowyer), was placed 1st, whilst for three vases of single *Chrysanthemums*, G. MOORMAN, Hampton Court Palace, was the only exhibitor, being awarded the 1st prize.

DECORATIVE CLASSES.

No fewer than 19 tables were decorated with *Chrysanthemums*, and it was a most difficult matter to decide which was the most pleasing exhibit. The judges gave their decision in Mr. Felton's class in favour of Mr. T. STEVENS, The Gardens, Donnington, Laurie Park, Sydenham. Mr. STEVENS employed yellow and bronze *Chrysanthemums* daintily arranged with *Codiaeum* leaves, grasses, and *Ampelopsis*.

In the Society's class for table decorations, Mrs. A. ROBINSON, Carshalton, won the 1st prize with an arrangement of pink *Chrysanthemums* and light foliage.

The better of two tables decorated with *Chrysanthemums* arranged for effect was shown by Mr. W. GOODING, Edenbridge, Kent, a very pretty exhibit, neat and effective.

The best vase of single *Chrysanthemums* and the best basket of berries and coloured foliage was exhibited by Mrs. MASLIN, Ongar Cottages.

Addlestone; the best two vases of *Pompon* varieties by Mr. F. FITZWATER, Bushey Lodge Gardens, Teddington; the best basket of *Chrysanthemums* by Mrs. G. DAVIS, Upper Norwood; and the best vase of single *Chrysanthemums* by Mr. KING, Hendon.

FRUIT CLASSES.

Grapes.—The best three bunches of white Grapes were shown by Sir WALPOLE GREENWELL, Bart., Marden Park, Caterham (gr. Mr. W. Lintott), the variety being *Muscat of Alexandria*.

Sir WALPOLE GREENWELL also excelled with black Grapes, having well-finished bunches of *Black Alicante*.

The finest bunches of *Gros Colmar* were shown by T. L. BOYD, Esq., Tonbridge (gr. Mr. A. C. Horton), the berries being very large.

Apples and Pears.—Culinary Apples were best shown by the Rev. O. TURNER, Weybridge (gr. Mr. A. Basile), who had remarkably good fruits. 2nd, Mr. BOYD.

The Rev. O. TURNER was easily first for dessert Apples, followed by R. GIRVIN, Esq., Sydenham (gr. Mr. J. Harrison).

The Rev. O. TURNER also won easily for six dishes of dessert Pears.

AWARDS.

First-class Certificates were awarded to the following varieties:—

Mrs. Richard A. Witty (Japanese).—A variety of chestnut-red colour with buff reverse.

Ceddie Mason (single).—A variety with chestnut-red florets. (Both these shown by Messrs. WELLS & Co., Merstham.)

D. B. Crane (Japanese).—Rich gold colour, tinted with bronze. (Shown by Mr. MARTIN SLESBURY, Isle of Wight.)

Butler Caprice (decorative).—Old rose, tipped with yellow.

Mrs. Greening (decorative).—A very soft shade of rose, specially recommended for pot culture. (These two were shown by Messrs. BUTLER BROS., Bexley Heath.)

Snowflake (single).—A large white variety. (Shown by Mr. P. LADDS, Swanley.)

Ethel Thorp (incurved).—Of silvery pink shade. (Shown by Mr. H. W. THORP, Worthing.)

Mrs. W. Roots (decorative).—A pure white variety. (Shown by Mr. W. ROOTS, Cranford.)

Countess of Granard (Japanese).—A fine flower, buff-yellow tone. (Shown by Mr. NORMAN DAVIS.)

NON-COMPETITIVE EXHIBITS.

Mr. NORMAN DAVIS, Framfield, Sussex, excelled with his group of *Chrysanthemums*, winning two Gold Medals, one being an extra prize as being the finest display in the show. The group was one of the best exhibits of *Chrysanthemums* we have observed at an exhibition; the execution was bold, ample space being available, and no feature was obtrusive. Sufficient greenery and decorative plants were employed to enhance the whole without overshadowing the effect of the flowers. Along the centre were arranged big epergnes filled with large Japanese blooms. Especial mention may be made of *Countess of Granard* (tawny yellow), Mrs. A. Herbert (creamy-white), Mary Poulton (delicate pink), Mrs. Norman Davis (white), George J. Bruzard (a fine red variety), Mrs. F. C. Stoop (pink flush on cream), Geo. Hemming (amaranth), and W. Mease (carmine amaranth). There was also a selection of the best single and decorative sorts.

Messrs. H. J. JONES, LTD., Hither Green, Lewisham arranged an imposing group of choice *Chrysanthemums*, utilising many handsome vases to display them, with bamboo epergnes and, as relief, Ferns, *Pandanus Veitchii*, *Dracanas*, *Abutilons*, Ferns, &c. Especially noticeable were vases each containing as many as 20 choice Japanese blooms, of such fine sorts as Mrs. L. Thorn, Sir Albert Rollet (rich red), Hon. Mrs. Lopes, Master David, Capt. Mitford, Mrs. Hygate, and Sir Frank Crisp. The ground was covered with dwarfier vases of choice single and decorative sorts, *Gaiety* (rich bronze), *Sandown Radiance* (crimson), and *Robert Thorpe* (white). Amongst new Japanese varieties we noticed *Lady Frances Ryder* (white),

Ernest G. Mocatta (yellow sport from *Edith Jamieson*), Harry Wood (crimson scarlet), and Miss Elspeth King Clark (primrose tipped with rose).

Messrs. W. WELLS & Co., Merstham, was also awarded a Large Gold Medal for a fine exhibit of *Chrysanthemums*. The display measured 75 feet frontage, and was arranged with much taste. At the back were tall stands of large Japanese varieties with Pampas grass, and set off by big clumps of *Michaelmas Daisies*. The exhibit contained many promising seedlings. *Marie Loomes* is a new variety of brick-red colour with golden reverse; Mrs. J. C. Kelly is also a fine new red variety. Amongst the singles none was more beautiful than the new *Merstham Red* variety, crimson with a yellow disc.

Mr. F. BRAZIER, Caterham, showed ornamental *Conifers*, *Michaelmas Daisies*, *Phloxes*, and other border flowers.

Mr. PHILIP LADDS, Swanley, Kent, had a very handsome exhibit of *Chrysanthemums*, of all types, principally of sorts best suited for market cultivation. The style of arrangement was admirable, and the quality of the flowers left nothing to be desired.

Mr. H. W. THORP, Durrington, Worthing, showed Japanese and incurved *Chrysanthemums* of fine quality, prominent in the group being the new *Ethel Thorp*, an incurved flower of soft pink shade.

Messrs. H. CANNELL & SONS, Swanley, showed a bright group of *Zonal Pelargoniums* and single *Chrysanthemums* against a background of tinted Beech foliage, and set in *Adiantum* Ferns and other greenery. Of the *Pelargoniums*, London (a scarlet-magenta colour), *Salmon Paul Camper*, *Naples* (crimson-scarlet, more than 3 inches across the individual flowers), and *Uranus* (ecrise) are especially choice. Amongst the *Chrysanthemums* *Cannell's King* (red), *Golden Pagram*, Mrs. F. J. Collet (terra cotta), and *Starfish* (bronze) may be instanced as good sorts. This firm also showed a display of hardy fruits of fine quality.

Messrs. GOLFREY & SONS, Exmouth, showed *Chrysanthemums* and bunches of *Zonal Pelargoniums*.

HOBBIES, LTD., Dereham, Norfolk, staged a large bank of *Rambler* and other *Roses*, also a showy group of *Peony-flowered Dahlias*, with a few *Cactus* kinds intermixed.

Messrs. J. CHEAL & SONS, Crawley, showed *Dahlias* of all types, having especially choice varieties of single and *Pompon* sorts.

Mr. G. L. CASELTON, Superintendent, Crystal Palace Gardens, arranged a beautiful group of *Begonia Gloire de Lorraine*, intermixed with *Pandanus Veitchii*.

Messrs. H. MARSH & SON, South Darenth, displayed Apples, &c., packed for market in boxes and baskets.

Messrs. JOHN PEED & SON, West Norwood, exhibited a large number of Apples, all finely selected fruits.

From the Colony of British Columbia was seen a collection of Apples in boxes and baskets, with a few other fruits preserved in bottles.

Garden furniture was shown by Messrs. H. SCOTT & SONS, Woodside, and Mr. G. W. RILEY, Herne Hill, London. Mr. J. HAWS, Clapton, showed watering-cans of his special make.

The ICHTHEMIC GUANO CO., Ipswich, showed their specialities in manures.

Mr. SPENCER MURRIN, Bristol, was awarded a large Silver Medal for a table of floral devices.

MEDALS.

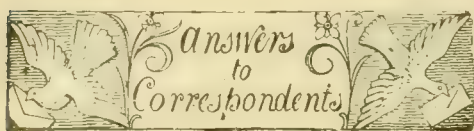
Gold Medals were awarded to Messrs. H. J. JONES, Lewisham; W. WELLS & Co., Merstham; PHILIP LADDS, of Swanley Junction; NORMAN DAVIS, Framfield; H. CANNELL & SONS, Swanley; and J. PEED & SONS, Norwood.

Dean Memorial Gold Medal to Messrs. BUTLER BROS., Bexley Heath.

Silver-gilt Medals to Hobbies, LTD., Dereham; Messrs. HARRIET SCOTT & Co., Norwood; H. W. THORP, of Worthing; GOVERNMENT OF BRITISH COLUMBIA; and the CRYSTAL PALACE COMPANY, per G. L. CASELTON.

Large Silver Medals to Messrs. FRANK BRAZIER, Caterham; J. CHEAL & SONS, Crawley; DAVID RUSSELL, Brompton; SPENCER MURRIN, Bristol; and J. AUSTIN, Brixton.

Small Silver Medal to Mr. J. WILLIAMS, of Ealing.



* * * The Editors will be glad to receive, for consideration, large photographs of horticultural subjects, suitable for reproduction as Supplementary Illustrations in this Journal.

CHRYSANTHEMUM SPORTING: Spring Hill. It is not uncommon for a Chrysanthemum to produce flowers of a totally distinct colour to the normal. The abnormality is known as sporting, and many new varieties have arisen in this way. Roses and Dahlias frequently exhibit this colour sporting in the flower.

CULTIVATION OF GRAPES: La Jardinier, Essex. Mr. Jefferies has been good enough to send the following information in reply to your questions:—Black Hambro and Black Hambro are one and the same Grape. The rods in the vinery at Moor Hall, Essex, are 4 feet apart, and they are single rods. The area of the house is 30 feet by 15 feet, with a lean-to roof, and it contains eight vines. The back wall is 14 feet high, and at the front (inside) there is room enough to walk in the path which goes by the side of a front stage. The vinery has long, sliding lights, and was erected about 45 years ago; I planted the vines 11 years ago in February, when I first came here. I allow 12 to 14 bunches per rod, according to the size of the bunches. The house is at present packed with Chrysanthemums, and it is nearly always in use. It is started in January very slowly, so that it will not be necessary to burn much coke; it is then filled with bedding plants. If I thought the bunches would weigh 4 lbs. each I should not allow more than 10 to remain on each rod, as first-class quality is the highest consideration in Grape growing. The vines ought to be 18 inches below the glass, but ours are only 15 inches. I have never notched any rods; as a matter of fact, I interfere with them as little as possible; they were top-dressed (3 inches) two or three years ago, but it will not be repeated this year, although I hope to prick into the border (which is outside and raised above the ground level) 1 cwt. of bone-meal. The border is 10 feet wide, and there is 2 feet 9 inches depth of soil at the back near the front lights, but only 2 feet of soil at the front: this is kept up by boards. The drainage is a foot deep. The drains run from back to front, and one drain runs in front and "picks" up the others, which are 8 feet apart. The composition of the soil was as follows:—The soil was ploughed 2½ inches deep from a field that had been laid down to grass 15 years. It was of a very heavy nature. I had 40 cartloads of this, and I put with it 80 barrow-loads of lime rubble, 40 of burnt garden refuse, 30 bushels of coarse charcoal, and one ton of Bentley's vine border compound; I could not add more burnt earth or charcoal as I had not got it. The two plants of Muscat of Alexandria are planted at the lighter end of the house, three rods of Madresfield Court next, and then the three Black Hamburgs: eight vines in all. I endeavour, by judicious ventilation, to keep the Muscat end the warmer. I syringe a little clay water on the glass when the days get hot; this prevents Muscats from scorching and it is beneficial to the Black Grapes. Madresfield Court requires much care in ventilation when colouring. I am careful not to let the border get dry, and 50 gallons of water are afforded each front light space of border when watering is done, so as to well soak the soil. I cannot get liquid manure, so I apply 1 cwt. of Thompson's manure.

CUTTINGS OF ROSES: G. S. O. B. You will find directions for making and inserting cuttings of Roses in the issue for September 3, pp. 178, 192.

FERN AND PALM FOR EXAMINATION: Lothian. The Ferns are very badly infested with brown scale. There are such numbers of the pest present as to render any attempt at their eradication by means of ordinary treatment, such as spraying or sponging, futile, and the only way is to cut off and burn all the fronds,

taking care that none of the scale lurks in the old stool. The Palm root is attacked by *Ripersia terrestris*, a creature allied to mealy bug. Carbon bisulphide will destroy this pest. See directions for applying this remedy in the last issue, p. 328.

GRAPE CANON HALL MUSCAT: J. M. This variety is an extremely bad one in failing to set the berries, owing probably to a deficiency in pollen. It is usual to plant a vine of some free-setting variety, such as Black Hambro, in the same vinery as Canon Hall Muscat. At the time the bunches are in flower, keep the surroundings dry, and the air moving, permitting a little warmth in the hot water pipes, so that the top ventilators may be opened a trifle. At noon, tap the rods sharply to disperse the pollen.

HEDGE: W. H. D. You will find a list of the most suitable subjects for forming a hedge quickly, with cultural directions, in the issues for August 14, 21, pp. 107, 126.

MOLES IN A LAWN: H. S. Having failed with traps, your best plan is to make their burrows untenable or to employ poison. If half a peck of slaked lime is stirred in about 20 gallons of water and the liquid poured into one of the holes, the moles will vacate their runs. If poison is employed, it must be given as follows:—Secure a quantity of worms and mix a little strychnine with them and place in their runs below the ground, where fowls or domestic animals cannot reach them.

NAMES OF FRUITS: Gordonston. 3, Ribston Pippin; 5, Stirling Castle; 6, Wyken Pippin; 7, Blenheim Pippin; 8, Dumelow's Seedling (syn. Wellington); the numbers were detached from the other fruits. The tall one is Twenty Ounce; the red-striped fruit Hoary Morning.—*B. H.* 1, Ronald's Gooseberry Pippin; 2, French Crab; 3, Harvey's Wiltshire Defiance; 4, Golden Nonpareil; Pear Beurré Diel.—*Didier.* Crab not recognised.—*T. S. S.* Golden Ducat.—*T. Pollad.* The red fruit is Barnack Beauty; and the other, Gravenstein.—*H. H. H.* 1, Tom Putt; 2, Lane's Prince Albert; 3, Cockle Pippin; 4, not recognised; 5, Lady Henniker; 6, Ribston Pippin; 7, Cox's Orange Pippin; 8, Fondante d'Automne.

NAMES OF PLANTS: A. A. Tedfold. *Nicandra physaloides.* *Bothy.* 1, Solanum Dulcamara; 2, Tamus communis.—*E. W. R.* 1, Abies grandis; 2, Picea sitchensis; 3, Cupressus nootkatensis pendula; 4, Pseudotsuga Douglasii; 5, Escallonia floribunda; 6, Symphoricarpus orbiculatus variegatus.—*H. J. W.* *Micromeria Douglasii.*—*The Dover.* Possibly *Tecoma* sp., but the specimen is insufficient for proper identification.—*O. R. T.* 1, Begonia Martiana; 2, B. imperialis smaragdina; 3, Maranta regalis; 4, Dracena terminalis.—*H. H.* 1, Selaginella involvens; 2, Pteris scaberula; 3, Cytomium falcatum.—*P. R.* 1, Cypripedium Leeatum; 2, Cymbidium giganteum; 3, Odonoglossum mulus; 4, Calanthe vestita luteo-oculata; 5, Oncidium varicosum; 6, O. Forbesii; 7, Maranta Massangeana; 8, M. Makoyana.—*G. C.* *Pulmonaria officinalis.*—*J. C. G.* *Origanum Dictamnus* (Dittany of Crete).

PARCELS LOST IN THE POST. The Postmaster-General has sent us two labels detached from parcels addressed to the *Gardeners' Chronicle*, Wellington Street, London, one bearing the London post mark, October 19, the other Woolton Hill, October 21.

POTASH SALTS: B. B. There are three kinds of potash on the market: (1) Kainit, which contains 12 per cent. of potash, 34 per cent. of common salt, and 13 per cent. of magnesia; (2) sulphate of potash, which contains 50 per cent. of potash; and (3) muriate of potash, which contains 48 per cent. of potash. Kainit and muriate of potash must not be used on land deficient in lime. Kainit is too impure to use by itself for plants growing under glass, but it is a cheap source of potash for vegetables and fruit trees. It should be applied in the autumn at the rate of 4 to 6 ounces per square yard. Sulphate of potash is most commonly used, as it mixes well with other fertilisers: from 2 to 4 ounces per square yard is a suitable dressing. This form of potash is very soluble and readily taken up by plants. Muriate of potash is not to be recommended for garden work, the disadvantage

being that the acid it contains forms chloride of lime in the soil, which is easily washed away by heavy rains. Garden soils, as a rule, contain so little lime that they cannot afford to lose any. Muriate of potash may be applied at the rate of about 4 ounces per square yard.

ROSE LEAVES WITH ORANGE PATCHES: J. F. J. The plants are affected by the Orange-rust fungus, *Phragmidium subcorticatum*. Collect and burn all the fallen leaves in autumn, and in the spring spray the plants before the buds expand with sulphate of copper, at a strength of two ounces in three gallons of water.

TARRED ROPE AND ROSES: A. B. Employ Stockholm tar (not ordinary coal tar), and apply it at once, so that the ropes will be dry and hard before the Roses are trained to them in the spring. Another good method of preserving rope is by soaking it in tan. Procure some tan from a tannery, boil it in water in a cauldron, and then soak the rope in it whilst hot. Tan would not harm the plants.

TREATMENT OF LILIUM SULPHUREUM: B. D. K. After the flowers of *Lilium sulphureum* are over, the roots should be watered as before until the stem commences to die down, when the soil may be kept somewhat drier. At no time, however, must it be allowed to become parched as Lily bulbs quickly suffer from the effects of drought. The pots should be kept in a greenhouse, where a minimum night temperature of 40° to 45° is maintained. They will be better placed on the stage than in any other position. The bulbs must not be shaken clear of the old soil, as, when allowed to remain in their pots, the roots keep in the best condition. This Lily is a vigorous grower, and early in the New Year the bulbs may be shifted into pots a size larger than those in which they have been growing, using for the purpose a mixture of loam, peat, and sand. In potting, the large, fleshy roots at the bottom of the ball of earth should not be disturbed, but some of the old soil at the top may be taken off with advantage. After potting, sufficient water only should be given to keep the soil fairly moist, but the amount of moisture should be increased as the roots take possession of the soil and the stems develop. The small bulbils should be taken off at once, and planted in pans or boxes of sandy soil. They must not be dried; roots will commence to form soon after they are planted.

WEEVILLED GRAIN: V. Sackett. The grain is infested with the common granary weevil, *Calandra granaria*. You can destroy large numbers of the beetles by placing shallow vessels of bisulphide of carbon (highly inflammable) on the surface of the grain and covering it with a tarpaulin sheet. The method generally adopted in the United States is to fumigate with hydrocyanic acid gas (poison); but both this and the former method involve risk, and should be carried out by an expert only. We would recommend as the better course to get rid of the grain as soon as possible by feeding it to stock. Meanwhile, it should be turned frequently (at least once a week), and when completely removed, the whole of the interior of the granary should be most thoroughly sprayed with hot paraffin and soap emulsion applied freely with an ordinary garden syringe. If there is a space between the floor and the ceiling or other structure below, it will, in all probability, be found filled with grain and swarming with weevils; if so, it will be necessary to remove the flooring and refuse, so that the whole may be thoroughly sprayed. The formula of the emulsion is as follows:—Soft soap, 1½ lbs.; paraffin (White Rose or Solar distillate), 1 gallon; water, 5 gallons. Dissolve the soap in boiling water. When still boiling, or immediately after it is removed from the fire, add the paraffin. Churn by means of a force pump or syringe, and apply the emulsion as hot as possible. The operator should wrap a piece of cloth around the barrel of the syringe to prevent burning.

Communications Received.—H. C. & Sons, A. E. P., H. J. J., Staffs.—E. W. S., H. B., Cornwall. H. C., A. H., Notts.—Reader, F. C., J. W., J. D., H. M., P., F. H. R., C. T. D., C. A. H., J. C. T., J. W. & Son, J. F., C. I. C., R. A. M., C. P., W. J. V., Anxious, A. C. B., W. W. P., S. A., W. E. B., W. P. R., W. H. Y.



THE

Gardeners' Chronicle

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THE ARNOLD ARBORETUM.*

(See pp. 143 and 144 and Supplementary Illustration.)

FOR many years past the most generous contributor of hardy trees and shrubs to Kew has been Professor C. S. Sargent, Director of the Arnold Arboretum, near Boston, U.S.A. It has long been known to us that in the establishment he controls there exists the richest collection in the world of the hardier North-East American and North Asiatic woody plants, and, with a view to ascertaining what was lacking in, and might be obtained for, the Kew collection, I was deputed by the Director to pay a visit to this establishment, and afterwards to see as much of the horticulture—especially the tree and shrub growth—of the surrounding country as was possible in the 20 days I remained there. I landed in Boston on June 16, and sailed for home from New York on July 6 of the present year. About half my time was spent in the Arnold Arboretum, and I also visited the public gardens of Boston, New York, and Rochester, the Victoria Park on the Canadian side of Niagara, as well as some private gardens of repute in the neighbourhood of Boston and New York.

I have to acknowledge my indebtedness to Professor Sargent not only for many courtesies received whilst I stayed in the Arnold Arboretum, but also for using his good offices to make my visits to other establishments easier and more profitable.

HISTORY AND ORIGIN

The Arnold Arboretum extends over some 220 acres, and is situated in Jamaica Plain, one of the suburbs of Boston, easily reached from any part of the city by electric trams. It owes its name and origin to Mr. James Arnold, a wealthy merchant of New Bedford and a member of a well known Quaker family, who, about the year 1870, left 100,000 dollars "for the promotion of agricultural or horticultural improvement." One of the trustees of this fund was Mr. George B. Emerson, the author of the well-known work on the *Trees and Shrubs of Massachusetts*, and, largely through his efforts and influence, Harvard University was induced to devote 125 acres of land belonging to it, known as "Bussey Farm," to the purpose of forming an arboretum. Ultimately the fund grew to 150,000 dollars, and a chair of arboriculture, with Professor Sargent as its first occupant, was instituted in 1875. The area has since been increased by some 90 acres.

The income from 150,000 dollars was a small sum with which to make and carry on an arboretum of the dimensions contemplated, yet with this sum Professor Sargent was expected to convert over 120 acres into a scientific garden, and without (as he observes) a library, or collection of plants, or public interest and support to begin with. Difficult as the task was, it has been accomplished, and the Arnold Arboretum is to-day a remarkable monument to the hard work, perseverance, diplomacy, and skill of one man. Since its foundation, Professor Sargent has raised some 1,200,000 dollars (chiefly, I believe, from private sources) to develop and maintain the institution, and his aim is to secure an endowment fund of at least 1,000,000 dollars to carry it on permanently. Considering the work the Arboretum has done and is doing, that sum seems a very modest one, and, in a country so rich as the United States in public spirited men, will, no doubt, be obtained. Besides an incalculable amount of work, Professor Sargent himself has given his books, illustrations, and herbarium to the Arboretum a princely gift, for it forms the bulk of a library now consisting of 23,000 volumes, all of which deal, in greater or less degree, with the woody vegetation of the globe.

The aim of the establishment is to provide facilities for the study of the trees and shrubs of the whole world, but especially those of North America. A handsome building, known as the Museum, was built in 1892, mainly at the cost of the late Mr. H. H. Humewell, of Wellesley; and recently an extension of it has been erected at a cost of £3,000. The older part is now used to hold the library, and to provide offices for the members of the staff. The newer portion houses the herbarium, and consists of four storeys, fitted with air-tight steel cabinets sufficient to hold 1,000,000 sheets. These steel cases reach from the floor to the ceiling, so that there can be no accumulation of dust above them, and they are a great improvement on the common wooden ones of the older herbaria, as they are fireproof, economise space, and do not warp or admit dust. They are, of course, much more costly. On the ground floor of the Museum there is a fine collection of specimens of North American timbers, which are part of the famous Jesup collection, the main portion of which is now exhibited in the Natural History Museum at New York. In an adjoining room there is an excellent collection of the fruits of Conifere. Many of these, especially the cones of Firs, Spruces, and Pines, are too large and bulky to be accommodated on the shelves of ordinary cabinets, and are here arranged in drawers.

The herbarium is under the immediate charge of Mr. C. E. Faxon, Professor Sargent's co-worker, and the most famous of American botanical artists. He prepared the illustrations for the great *Silva of North America*, for the *Manual of the Trees of North America*, and was the regular artist for *Garden and Forest* as he is now for *Trees and Shrubs*.

BEAUTY OF LANDSCAPE.

To one who enters the Arboretum for the first time, the most striking impression received is that of its great beauty of landscape. Only a very small proportion of its surface is level, and at several points it swells into bold prominences, such as Peter's Hill, Bussey Hill, and Hemlock Hill. The last-named is, indeed, the most remarkable part of the grounds. It is a steep hill, with outcropping rock, and almost precipitous on one side, covered with a primeval growth of "Hemlock"—the American name for *Tsuga canadensis* (see figs. 143 and 144). Some of the older trees are splendid examples. I measured one over 9 feet in girth of trunk. It is a peculiarly fortunate circumstance that this wood should have been preserved to a public body in whose hands its continued existence is assured, for but little of the primeval forest of the New England States remains, and the fact that this tract is almost within the confines of a large city makes it doubly precious. At its northern base a brook finds its exit from the grounds, after having traversed them in various phases, and makes a charming feature; especially where it has passed through a flowery meadow, the gully it has worn out fringed with native vegetation, amongst which, at the time I saw it, the Elderberry (*Sambucus canadensis*) made a pretty display.

To the top of the sister prominence, Bussey Hill, a carriage drive has been made, and from this point a great expanse of beautiful country can be seen, especially the rolling outlines of the Blue Hills in the far distance.

Another beautiful feature of the Arboretum, and one which makes a special appeal to the Briton, is the native undergrowth. In place of the lawns and grass, which cover so much of the ground in English gardens and parks, there is here a very interesting ground covering consisting of native plants, amongst which are various species of *Vaccinium*, *Aster*, *Rubus*, *Golden Rod*, *Asclepias*, *Baptisia tinctoria*, *Comptonia asplenifolia*, and the *Poison Ivy* (*Rhus Toxicodendron*). Very abundant in places—for it has thoroughly naturalised itself—is the European dyer's Greenweed (*Genista tinctoria*), making a gay display in early July. Springing up freely every year amongst this low growth is a crop of seedling Oaks and Hickories, so numerous that, in view of the needs of the exotic trees, they have to be mainly treated as weeds. Professor Sargent finds that this low ground cover is not only more beautiful and interesting than meadow, but it is also much more favourable to tree growth. It keeps the earth shaded and cooler than a covering of turf, and does not rob the ground of moisture so much. With the crowds that visit Kew, a general treatment of the ground in this way would be impossible; but we have found that for trees rare and difficult to grow, a ground-cover of Heath is very advantageous, providing shade and shelter for the roots and stem without unduly robbing the soil.

In the more secluded hollows and glades, Professor Sargent is developing a rich growth of Ferns and shade-loving plants.

Another feature in the landscape of the Arnold

* Mr. W. J. Bean, in the *Kew Bulletin* No. 8, 1910.

Arboretum is the artistic treatment of the walks and boundary walls. Unlike Kew, the grounds are open to horse drawn carriages (not motors), and are traversed by a system of broad, finely-paved roads, which were made and are maintained by the Park Department of the city of Boston. (It may here be mentioned that, in making these roads, in providing police protection, and in holding the property for ever free of taxes, Boston does something towards the support of the most beautiful of its open spaces.) On each side of the road, and separated from it by a few feet, there is a path for foot traffic. A triple track of this kind is not, of course, in

stone, which makes an effective boundary, but is not at present high enough to exclude trespassers—as it is hoped eventually to make it. This wall is covered with a variety of climbing plants, amongst which the species of Clematis, Vitis, and Celastrus are most conspicuous. These plants, which are pruned back annually in spring, had, by the time of my visit, about hidden the walls in a beautiful tangle.

THE COLLECTIONS.

It would, of course, be impossible to give any detailed mention of the collections of trees and shrubs. In a general way they are extremely

shapely form of the Sugar Maple, rarely or never seen in perfection here.

The climate of Boston, judging by its vegetation, bears about the same relation to the British Isles as that of Central Europe. The summers are much brighter and hotter; the winters much colder. In consequence, deciduous trees and shrubs flower with much greater certainty and freedom than they do in Britain, they bear fruit more plentifully, and the colouring of the decaying foliage in autumn is richer than anything ever even suggested in our climate. The climatic conditions of Boston are evidently very favourable to the growth as well as the flowering of



FIG. 143.—A PRIMÆVAL GROWTH OF *TSUGA CANADENSIS* IN THE ARNOLD ARBORETUM.

(See also fig. 144.)

itself an object of beauty, but by planting the space between the carriage drive and the foot-path with a varied shrubby growth, which provides usually a low, irregular fringe to the foot-paths, but sometimes is high enough to seclude them entirely. Professor Sargent has given them a singular charm. Through the wilder parts of the grounds grassy ways have been made, which are kept closely mown to the width of a single cut of a mowing machine. Winding through the tree collections or across the hill slopes, they provide the pleasantest of walking tracks.

The Arboretum is surrounded by a box wall of

rich in North-east American and North Asiatic species, but comparatively weak in European and West North American, whilst the floras of New Zealand and South America are scarcely, if at all represented.

To one who has never been out of Europe before, the perfect development of the native American trees naturally appeals most strongly. Especially does one admire the splendid, full-grown Hickories, only known as comparatively small trees in this country; the various White Oaks, which do not thrive at all with us; and especially the beautiful plumose branching and

many North Asiatic trees and shrubs. The Oaks, for instance, introduced by Professor Sargent from Japan 20 years ago, such as *Q. crispula*, *Q. glandulifera*, and *Q. grosseserrata*, have made splendid progress, and are proving admirable trees. *Cercidiphyllum japonicum*, which at Kew, owing to its young growth being cut back by frost once or twice every spring, has never got beyond the dimensions of a scrubby bush, is, in the Arnold Arboretum, represented by several vigorous, cleanly grown trees 30 to 40 feet high. The bush Honeysuckles (*Lonicera*) have a value as ornamental fruiting shrubs beyond anything

we ever experience. By the latter part of my stay in Boston many of them had become covered with crops of fruit, beautiful in their abundance and in the translucence of their red, yellow, or other colouring.

Perhaps the most noticeable difference between the general aspect of the vegetation of the Arnold Arboretum and that of English gardens is the absence of our common evergreens. Neither the Holly, the Yew, the Ivy, the Aucuba, nor the Box appears to be genuinely hardy, and only a small proportion of our garden varieties of Rhododendron succeed well. The Chilean Berberis Darwinii, the New Zealand Veronicas, the Bay Laurel, Magnolia grandiflora, the Arbutuses are

peculiar understanding of plant life which enables its possessor to divine by intuition the treatment best suited to his charges, and the happiest devices for increasing their number, Mr. Dawson has done much by his genius as a propagator and cultivator towards making the collections so rich as they now are. He was about the first to recognise the value of *Rosa multiflora* and *R. Wichurana* for hybridising, and he has raised such fine Roses as *The Dawson*, *Lady Duncan*, *E. C. Egan*, and *Arnoldii*.

I was fortunate to see a new Rose in flower which Mr. Dawson has raised and called "*Professor C. S. Sargent*" (see Supplementary Illustration). The original plant, raised in 1903, is now

THE MARKET FRUIT GARDEN.

PLANS AND OBSERVATIONS.

Now that the busy season of fruit marketing has nearly come to an end, the fruit grower has time for making plans for the future and observations in relation to various points of policy in the treatment of his orchards. He may have the results of experiments in planting, grease banding, pruning, or spraying to examine, and this is a profitable use of his time, which, judging from my own case, is sometimes sadly neglected. With shame I confess that, time after time, I have carried out experiments, and carefully noted them down, and then have forgotten to examine the



FIG. 144.—TRUNKS OF *TSUGA CANADENSIS* ON HEMLOCK HILL, ARNOLD ARBORETUM.

(See also fig. 143.)

all too tender to be grown in the open. In the matter of evergreens as a whole, English gardens have much the advantage.

Several notable hybrid Roses have appeared in the Arboretum, raised by Mr. Jackson Dawson. Mr. Dawson has, like Professor Sargent, seen—and helped in—the development of the Arboretum since its inception, and, in regard to the outdoor department, he has, in a great measure, played the part of builder to that of the Professor's architect. Trees now 60 feet high he himself raised from seed, or collected as seedlings in the forests. Gifted with that

8 feet high and 9 feet through, a sturdy bush, with splendidly vigorous foliage. It bears large, flattish trusses of semi-double flowers, 3 inches across, of a delicate, Apple blossom shade, and from 30 to 50 in a truss. In June it was carrying thousands of flowers—a wonderfully beautiful picture. Its parentage is as follows:—Pollen bearer, "*Baroness Rothschild*"; seed bearer, an unnamed hybrid between *R. Wichurana* ♀ and "*Crimson Rambler*" ♂. In this interesting combination the influence of *R. Wichurana* is only seen in the very glossy, thick, dark green foliage.

(To be continued.)

results at the proper time. The recognition of this neglect leads up to a plan of recording in a manner that must attract attention on all experiments that may be carried out during the next 12 months. The best way of accomplishing this purpose will be to write the date and character of each experiment, and under it the date when results should be examined, on a placard that can be hung up in the office or study, a section for each record being left for notes on results, making a point of glancing over it at certain intervals, as on the first working day of each week. Hitherto my records have been made in what

may be styled a field book, in which important operations carried out in each field are set forth. This is all right so far as it goes, and is necessary as a permanent record; but something more is needed to call frequent attention to the need of observing results.

GREASE-BANDING.

It has been a question for consideration whether the plan of grease-banding such Apple trees as lend themselves to the process should be adopted by me, as it has been by a great number of other fruit-growers. My abstention from it has been due partly to the argument that, as the operation does not save a single spraying, it is not worth the considerable amount of labour and expense which it involves. However many wingless moths may be caught on the bands, some of their caterpillars are certain to be found on the trees, while the bands are almost useless for the destruction of winged moths. Therefore, spraying to poison the food of the larvæ of the Codling; and other fruit or leaf-eating pests cannot be dispensed with in consequence of grease-banding. Leaf-eaters can be killed by spraying with lead arsenate as soon as the leaves expand, and where the Codling moth is troublesome it must be applied shortly after the blossom has fallen, if mischief is to be prevented as far as possible. Then why not trust to spraying alone, and save the expense of banding trees, perhaps 300 on an acre, and greasing the bands at least twice during the autumn and winter?

The only reason for any hesitation as to continuing to dispense with grease-banding that has had any weight with me is this—that leaf-eating caterpillars often do much damage inside bunches of leaves before the latter unfold, and the pests emerge to feed in the open. So long as they are inside closely-folded leaves, the caterpillars cannot be poisoned. But then my oldest trees are in bush form, branching out close to the ground, and it is generally admitted that banding is out of the question with them; while the younger trees are on short stems, encircled with wire netting, which reaches nearly up to the lower branches, so that there is no room in many cases for a band above the belting, and it would be comparatively useless lower down, because the moths could crawl up the netting and thence on to the trees. On the whole, the conclusion is that in cases like mine it is not worth while to go in for grease-banding, if it is in any case.

FRUIT PLANTING.

The results of last season's planting are not favourable to the Woburn method of puddling trees in. The land was so extremely wet during nearly the whole of that season that a great number of the Apple trees were practically puddled, and never before have there been such a large proportion of dead trees after a planting as there are in my young plantation made under the conditions indicated. Usually the deaths have hardly averaged one to the acre, whereas the proportion among the trees planted in the autumn and winter of 1909, after the land became thoroughly wet, is about five to the acre. There are no dead trees in the portion first planted when the land was in good condition.

With respect to plans of planting, some misgivings have arisen in my mind as to whether the one uniformly adopted by me is altogether the best in plantations of top and bottom fruit. In order to allow of horse-drawn cultivators up and down and across a field for some years after planting, the distances from bush to bush or bush to tree has been made 6 feet, while the trees are 12 feet apart in the rows and a little more crossways, as they are angled, a tree in one row being placed opposite to a bush in the next tree and bush row. Now, this distance between trees on short stems, trained in bush shape, is the best on my land, taking all varieties into account; but the bushes do not need so much as 6 feet, and the question arises as to whether it would not be more advantageous to allow them only 4 feet in the rows, still leaving 6 feet from row to row.

This would prevent horse cultivation crossways, and the rows would require hand-hoeing to the width of about 2½ feet along their entire lengths, instead of only the squares about 2½ feet across around the trees and bushes. The expense of each hand-hoeing would be increased by about 2s. an acre, but that would be a trifle in comparison with the return from the great increase in the number of bushes. Probably bushes only 4 feet apart would meet in time (and the distance must be 4 ft. or 6 ft.), but not in my soil much before the trees would overshadow them enough to render their removal desirable.

It must be admitted, too, that the great economy and efficiency of horse cultivation in fruit plantations cannot be secured without some sacrifice; for, if it were not entertained at all, the distances between trees of different varieties might be varied, in accordance with robustness or feebleness and habits of growth. But the advantage of using horses, apart from economy, is very great, particularly where extra hands for hoeing cannot always be obtained just when they are wanted. The cultivator can be set to work whenever a dry day, with appear-

needed cutting back not more than half their lengths. Why did the fruit-buds form prematurely on the young branches of the exceptional row? Simply because the roots had not recovered from the transplanting process sufficiently to nourish the branches properly. Therefore, the theory of the advocates of deferring pruning till the second season seems to me baseless, and I am persuaded that if there is any advantage in their plan it is due to the necessity of pruning in the second season much more severely than appears to be necessary with trees cut back in the first spring after planting. If the grower in the first spring would cut back the latter voluntarily as severely as he is obliged to cut back the former in the second season, I am persuaded that the trees pruned in the first spring would be better than the others, and would be fully furnished with branches a year sooner.

AN UNPLEASANT TASK.

Some of my men have been engaged recently in grubbing up over an acre of King of the Pippins, Potts's Seedling, and Stirling Castle Apples planted 10 years ago. The first two varieties



FIG. 145.—*ALECTORURUS YEDOENSIS*.

(See p. 353.)

ances of settled weather, occurs, and the work is done so quickly that there is a good chance of killing weeds, while it can be stopped immediately if rain comes or threatens. On the other hand, even if a gang of hand-hoers can be obtained precisely when needed, the men who have had the work let to them cannot be expected to be idle while the soil is too wet for killing weeds well, or when rain is apparently approaching, and there is always time for an unfavourable change in the weather while their slow work is going on.

Examination of a row of trees rammed when planted five years ago, as on former occasions of observation, shows no difference from the rows adjoining it, not rammed.

The same verdict applies to a row not cut back until the second spring after planting, the adjoining rows having been dealt with in the first spring. The young branches of the trees not cut back till the second season had formed fruit-buds along almost their entire lengths, so that they had to be cut back to within 2 or 3 inches of the trunks, whereas the other trees were furnished with twice as many branches, which

were big trees smothered with canker. Treatment was unavailing to check the disease, as the pestilent fungus permeated their entire systems, breaking out in places in all parts of them, even up to the tips of the young shoots and in the fruit spurs. Close to them were other varieties almost or quite free from canker; so the condition of the soil, a light one, does not account for the virulent attack. These two varieties should be banned from growing for market purposes. Stirling Castle was dwarfed beyond hope, through regular cropping, in spite of much thinning of fruit in the early years after planting. It was also cankered, but not in the same way as the other two varieties were. There were patches of canker on trunks and main branches, but the disease did not boil up, so to say, throughout the whole-branch and young-shoot system.

IS CANKER MERELY A "WOUND PARASITE"?

No doubt, as all authorities declare, canker is a wound parasite; but is it not something more? When the disease breaks out all over a tree, it seems to spread through the sap. The marks of it can be seen below and above a place of

outbreak inside the shoot, if the latter be cut. Probably aphids causes wounds enough to let in canker, but this does not account for all its outbreaks; and the same may be said of frost, which may burst the outer bark of young and tender shoots, and so let in the spores of the fungus.

SILVER-LEAF.

It is a great comfort to learn from the valuable experiments described in the 12th *Report* of the Woburn Experimental Fruit Farm (see p. 356), that there is no danger of spreading silver leaf in Plums or other kinds of fruit liable to it by means of the pruning knife, so far as the pruning of living trees or branches is concerned. This was fully proved by the trials carried out, as also was the fact that silver-leaf is the result of the attack of the fungus *Stereum purpureum*. The fungus produces spores only on the dead wood of trees or branches killed by it, and therefore it is only by getting spores on to a pruning knife by cutting a dead branch or shoot that infection can be carried on the blade. The importance of promptly removing and burning trees or branches dead from silver-leaf is obvious. Some fine specimens of the fungus from a dead tree are sent with these notes. *A Southern Grower*.

ALECTORURUS YEDOENSIS.

This interesting plant belongs to the natural order Liliaceæ, and is closely allied to the well-known genus *Anthericum*. Probably it is better known in gardens under the name of *Anthericum yedoense*. As far as is known *Alectorurus* is a monotypic genus. *A. yedoensis* is a native of Japan, being found on Mount Tebake in the province of Tosa. It grows from 1 foot to 2 feet high. The distichous leaves are 6 inches to 12 inches long, and $\frac{1}{2}$ inch to $\frac{3}{4}$ inch broad. The inflorescence is a widely-branching, pyramidal panicle, set with pale rose-purple flowers, having the stamens exerted twice the length of the perianth segments. The flowers are dioecious, each plant bearing one kind only. In its native home it is known as "Keibi-ran or Keibi Orchid." The plant is quite hardy in this country, succeeding in similar positions to those suitable to the *Anthericums*, and will flower freely in sheltered situations, but it is not seen to the best advantage outside. In pots it makes a very attractive plant, producing its flowers freely in July and August. Its introduction into cultivation in this country is due to Mr. A. K. Bulley, who presented a plant of it to Kew in 1901. The plant shown in fig. 145 produced staminate flowers only, so that no seed was formed. The species is figured in the *Botanical Magazine*, t. 8336. *W. L.*

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

MICHAELMAS DAISIES AT THE HERMITAGE.—"Season gardens" are fast and deservedly becoming fashionable, and for autumn nothing can exceed in beauty a good arrangement of the perennial Asters or Michaelmas Dai-sies. In an April number you published some cultural notes from the pen of Mr. R. Richards, gardener at The Hermitage, Holmes Chapel, and on the 19th of October the writer was privileged to see that unique display, and was charmed thereby. The space devoted to this feature is on sloping ground, and comprises two straight borders about 70 feet in length, 15 feet wide, separated by a broad, gravel pathway, at the higher end of which is a cross border, the whole being backed by Yew hedges. Planted about 3 feet apart each way, and each plant carrying five or six well flowered shoots—which are artistically tied out on neat canes, instead of being bunched up like brooms—the effect produced is both massive and gracefully elegant. Then, too, the colours are selected to blend well—white, blush-mauve and light blue predominate, with a few very fine pinks. Oftentimes the strong-growing varieties of Aster are so tall that in mixed borders they are anything but elegant,

but Mr. Richards treats these in the manner of Chrysanthemums, and cuts them back in the early part of the season—I think May. I should have said, too, that the borders slope upward from the path, and with the arrangement of the varieties according to height, present a gradually sloping bank of blossom. Experience is the best guide as to the relative positions of the sorts, and, as Mr. Richards takes his plants up each season after flowering, an opportunity is afforded to rectify any mistake made in this matter. This annual replanting affords opportunity for trenching and manuring the soil: it also admits of the best young crowns being selected for the coming season's display, and, as seen here, the result well compensates for all the trouble incurred. Some of the varieties specially noted are:—*Delight*, a graceful, small-flowered sort; *Captivation*, a pretty, rosy flower; *Enchantress*, *Esther*, *Cordifolius elegans*, *Photographer*, *Freedom*, *Decorator*, *E. C. Buxton*, *King Edward VII.*, *Marie*, and of the larger-flowered section, *Mrs. Raynor*, a rosy variety, was conspicuous. *Royalty*, too, *Triumph*, *Grandis*, *Ericoides superba*, and a showy variety of the *Novae-Angliae* type all compel notice. The charm of these borders is enhanced by the perfect balance secured by a corresponding arrangement of varieties on either side of the path. It only remains to add that the pleasure of Mr. H. J. Reiss and his family is increased by sharing the view with those who appreciate beautiful garden effects. *Visitor*.

THE BARR AND THOMSON MEMORIALS.—As a subscriber to both these memorials, I trust I may not be considered impertinent if I enquire as to their present position. Over six months, I think, have elapsed since appeals for subscriptions to these memorials were issued, but I do not remember to have seen any recent reference of any important kind made to either. If there has been such, then I am probably to blame. If, however, anyone in official position in relation to these memorials can give some information, it will be read with much interest generally. When long periods of time are allowed to elapse between an appeal and its final consummation interest is apt to die out. *Subscriber*.

APPLES AT THE R.H.S. FRUIT SHOW.—The presence at this show of many fruits which were grown under conditions other than normal served to show that there is a wide difference between fruits produced in ordinary conditions of culture and those produced by semi-artificial conditions. The exhibition schedule makes no distinction; indeed, one regulation specially favours the growing of Apples on walls and beneath glass copings. Fruits thus treated are nevertheless held to have been grown "in the open air." That numerous fruits produced under those highly-favoured conditions were staged was evident. Dessert fruits showed all the colour and thorough ripening common to fruits grown in orchard houses; cooking Apples were seen of abnormal size and finish, all plainly proving their highly-favoured conditions of culture. Such conditions of production cannot possibly be profitable, for not merely are the fruits thinned severely, but the general crop is far too small to repay the labour and expense involved. Is it worth while for the Royal Horticultural Society to encourage a system of culture that cannot possibly be commercially profitable? If the annual fruit show is not intended to encourage national fruit-culture with a view to making it a great commercial industry it is difficult to understand what may be its special object. In admitting these highly-forced fruits as coming within the condition of growth "in the open air" in the case of fruit on walls protected, it may be, by 2 feet wide glass copings, how is the stipulated condition fulfilled when frame lights are stood along the wall on end in front of the fruits to induce rich colouring and precocious ripening? Dessert fruits in this class were awarded prizes on the first day of the Show, and on the second day they were half rotten; surely that is not worth encouraging. If it is desired to encourage Apple-culture under such conditions, then certainly provide special classes for them. By so doing those growers who adopt no such artificial methods, but grow their fruits really in the open air on bush, cordon, or espalier trees, would compete on equal terms, all fruits grown on walls being relegated to their proper classes. In tens

of thousands of gardens, professional and amateur, Apples are grown on profitable lines. That is the aspect of Apple-culture that merits all possible help and encouragement. It would hardly be too much to ask that in naming every dish the nature or form of the tree on which the fruits were grown should also be specified. It is desirable that our great fruit show should be made educational. *F.R.H.S.*

EQUAL PRIZES.—I quite agree with *An Onlooker* (p. 297) that it should not be necessary to award equal prizes when judging collections of garden produce, but it seems to me that Mr. H. W. Ward (p. 318) has, for the moment, overlooked the smaller shows and the "any other variety" classes. At the larger shows, where there are so many classes that exhibits compete with their like, it should very rarely be necessary to award equal prizes, but in many small shows the classes are, of necessity, comparatively few. Many of us have judged at small country shows, where, for example, there has been at a summer show only one class for Apples, and we have found five or six, and sometimes more, distinct kinds in competition. In such cases as this, one is now and then compelled to award equal prizes, and I submit that these exceptions, which are more numerous than many would have us believe, should make a careful judge hesitate to assert that equal prizes are unnecessary and a sign of faulty judgment. *A. C. Bartlett*.

—I have had a pretty long experience in judging, and have many times found it impossible to divide two exhibits. Even at Shrewsbury, the show which Mr. Ward quotes (see p. 318) as free from this practice, my colleague and I last year found it necessary to resort to pointing in a class of 12 bunches of cut flowers, and on comparing notes discovered that they came out equal, leaving us no alternative but to make the exhibits equal 1sts. In judging artistic arrangements the difficulty of separating them is often even greater than in classes of a specified number of vases. I repeatedly find myself awarding equal prizes, there being no satisfactory way of pointing pieces of work composed of many different flowers for the purpose of forming an artistic exhibit. *R. F. Felton*.

CULTIVATION OF GRAPES.—A mistake has crept in the notes published on p. 348 about the Vine borders here. There are two Vineries, one early and the other late, side by side. The late Vinery contains three plants of Muscat of Alexandria, one plant of Lady Downe's, two Black Alicante Vines, one specimen of Mrs. Pince, and one of Appley Towers; the length of the two borders is 60 feet and they are 10 feet in width. The two borders will be given 1 cwt. of bonemeal this autumn, and 1 cwt. only of Thompson's Vine manure in the summer is applied to the two borders, not to one border. The 40 cartloads of soil were used to form the two borders. *A. Jefferies, Moor Hall Gardens, Harlow*.

QUEEN WASPS.—Very few persons can remember a year in which the country generally has been so free from the destructive wasp as has been the case this year. If we are to enjoy a similar welcome freedom next autumn, no effort should be spared to kill as many queen wasps as possible before they safely ensconce themselves in winter quarters. Just now, in warm, sunny places they may be seen almost drowsily flying about seeking some congenial place, and in this condition they may easily be killed. *A. C. Bartlett*.

ABUTILON THOMSONII.—I may perhaps be permitted to thank some nine or ten correspondents who have kindly sent me flower specimens of what they know as *Abutilon Thomsonii*. No one has sent me the true *A. Thomsonii*, and no one has been able to give me the history of the plant so extensively grown under that name. What the true plant is, is well known. It is a Veitchian introduction, and Mr. Harry Veitch kindly informs me that he remembers well taking it out of a Wardian case from Jamaica somewhere about 35 years ago. It came from a Mr. Thomson, a superintendent of gardens there, and once familiar to me as a Kew correspondent. Mr. Harry Veitch suggests that the plant now extant as *A. Thomsonii* is a seedling from it, and this is very likely correct, but someone should be able to relate the raising of it. *R. Irwin Lynch*.

VARIATION OF POTATOS IN DIFFERENT SOILS (see pp. 267 and 318).—I grew the variety Sir John Llewelyn a few years in Lancashire with other sorts on a south border in fairly friable soil, but it was such a poor cropper that I had well nigh discontinued planting it. Grown in pots and pits it was about equal with Veitch's Ashleaf and Sharpe's Victor. Here, in East Cardiganshire, it is a great favourite with the cottagers, and they tell me that they cannot get anything to equal it. I had five tubers brought to me, from one root, weighing 4 lbs., and another weighing 1 lb., and the same grower informed that he had one tuber last year that weighed 1½ lb. Coals being dear, the cottagers burn mostly peat, and the ashes and the small peat have been added from time to time to the soil, which is very little more than a foot deep, overlying shale, much impregnated with iron, and resting upon rock. The cottager prefers cow manure to any other. I was induced to give Sir J. Llewelyn a trial this season. The tubers were planted in a neglected piece of ground, covered with strong tufts of grass and some annual weeds. Commencing at one end of the plot I skimmed a yard width of the weeds and wheeled them to the opposite end, to be disposed of at the finish. I then threw out a trench and skimmed another breadth, and threw it into the trench, grass downwards, and so on until the other side was reached, when that which was wheeled came in for the last trench, which was completed a few weeks before planting time. I spread a fair quantity of manure in the trenches, and after the tubers were set the trenches were filled with soil. I had a good crop, but nothing like that of the cottager. The tubers were free from disease, as were those grown in other gardens; so were Up-to-Date and King Edward VII. The soil is poor and carboniferous; rock crops up in some places, so that it can be touched with the fork. *W. P. R., Cwmystwyth.*

MONTBRETIAS.—My experience is the same as Mr. Divers, for unless Montbretias are transplanted every two or three years, they become weak and refuse to flower. Plants which have not been disturbed for more than three years become thickets of small corms, producing weakly, grass-like foliage, and few, if any, flowers. If they are lifted every second or third year, and the best corms replanted singly, these produce strong growths and flower spikes 2 feet and 3 feet tall. Our practice here is to have two beds or borders planted with them, and to replant them alternately, every second or third year. Some growers advocate the lifting and storing of the bulbs through the winter months every year, but I do not think this is necessary. I have heard of Montbretias dying outright sometimes when left in the ground throughout the winter, but the old shoots, if allowed to remain, act as a natural protection. The old growths on our plants are never removed till the young shoots are growing well in the spring. *Wilmot H. Yates, Rotherfold Park Gardens, Hants.*

CODIÆUM (CROTON).—Amongst the many good things to be seen in the gardens at Aldenham House is a representative collection of Codiæums. They are cultivated largely as single-stemmed specimens in small pots in low houses that admit an abundance of sunlight. The rich tinting in the leaves of the individual varieties is thoroughly developed. Some cultivators prefer the narrow-leaved, drooping kinds, while others prefer those having broad, bold foliage which, with the large blotches of deep colour characteristic of many in this section, are well suited to various forms of decoration. A mixture of both types, in my opinion, is desirable. For the information of those who do not know these plants well I append a list of the choicer sorts of both sections:—*Narrow-leaved*: Aigburth Gem, with narrow leaves that are slightly interrupted, and coloured a rich crimson; *caudatus* tortilis, the twisted leaves are of medium size and a rich golden yellow colour; Aigburthensis, ivory white; angustifolius, still one of the best, with leaves of a rich golden yellow colour; *Planchean*, brilliant red; Mrs. Dorman, yellow and crimson; Golden Ring, the twisted leaves are golden yellow; *Johannis* elegantissimus, golden yellow; *Mooreana*, an effective yellow variety; *elegantissima*, very graceful habit and with bright yellow foliage;

Edmontiensis, with bronzy-red twisted leaves; Prince of Wales, the medium-sized leaves are of bright orange colour; Princess of Wales, foliage long and narrow and of a creamy-white. *Broad-leaved*: Queen Victoria, orange-yellow tinted with red, still one of the best in the section; Weismannii, variegated green and yellow; Warrenii, long, twisted leaves that are spotted with yellow and red; Reidii, a variety with extra broad leaves, coloured creamy pink and dark rose; Thomsonii, the tri-lobed leaves are bordered with green, the centre being yellow; Etna, the short leaves are of a fiery red colour, the plant being of a bushy habit of growth; Williamsii, of compact growth, with leaves of a fiery red colour; and Evansianus, having tri-lobed leaves of a brilliant red colour. *E. M.*

SAXIFRAGA TRIFURCATA CERATOPHYLLA.—I agree with all that Mr. S. Arnott (p. 295) says with regard to the attractive appearance of this mossy Saxifrage, as it is the most popular of this section in villa gardens in more than one of the southern counties of England, and is sometimes used as edgings, bordering the approach to the house. I would like to call attention to a peculiarity of the variety *S. trifurcata ceratophylla*. Some botanists do not regard it as distinct from the type, but as it has shorter flower stems, more divided and more rigid leaves, it is perfectly distinct for gardening purposes and recognisable at a glance. I was trying to cultivate it in pots, and two good-sized plants, as well as a small one I reared from a cutting, died one after the other. The pots were stood in a warm, sunny exposure, but not plunged, and possibly this would account for the gradual dying and browning that happened. It seems quite happy planted out on the rockery in the same garden. The name of this variety would indicate that Stag's Horn Rockfoil had first been applied to it, the botanical name meaning horn-leaved. The leaves are more rigid than in the type, indicating that the form is naturally a sun-loving plant in rocky situations, but evidently the roots are more susceptible of injury than the type. It is perfectly hardy, as I have grown it in the far north as well as south. *J. Fraser.*

The Week's Work.

THE FLOWER GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Hertfordshire.

Planting of Roses.—The present time is most suitable for the planting of Roses, with the exception of the Tea-scented varieties. To obtain the best results it is essential that the soil should be made as fertile as possible, and it should be a good depth, therefore, trenching is to be preferred to the ordinary method of digging. If this is well carried out in the first place excellent results may be expected to last for some considerable time. Thoroughly incorporate with the natural soil a good dressing of decayed farm-yard manure, and coarse bones, and some of the top spit from pasture land, if this can be obtained. Roses like a good, heavy loam, and good drainage; if the natural drainage is imperfect artificial drainage should be made at the time of forming the new beds, by placing a good layer of broken bricks or other suitable material before replacing the soil. These remarks apply specially to cases where climbing Roses are required for planting on clumps and other positions where the soil is poor or the aspect none too suitable. In many instances people cherish beds of Roses in which the plants are not only worn out, but representative of inferior varieties. Such beds should be renovated entirely, and better varieties planted. For general cultivation in beds, the Hybrid Teas will be found most floriferous, and most capable of resisting mildew, though no Rose is entirely immune from this pest, which so often mars their beauty. A typical instance of this class of Rose is General Schablikine, a profuse bloomer, and a splendidly-formed Rose, which flowers late into the autumn; we have cut excellent blooms from this variety in the middle of November, and I have never once, during the time we have grown it, seen the slightest trace of mildew upon the plants. Though there are numerous methods of forming Rose gardens, the system of planting a bed with one variety ex-

clusively seems to be gaining in favour, and the plan has much to recommend it. Climbing Roses, as those of the Wichuraiana type, are effective for covering iron fences, or for forming a screen for partitioning off the Rose garden or other portion of the flower garden. Here we have almost a quarter-of-a-mile of ordinary iron fencing covered with Roses, and, contrary to the expectations of many people, these plants make strong and vigorous growth every year. It is advisable at the time of planting against such a fencing to place some temporary osier sticks or similar material on which to tie the growths, so that these do not come in contact with the ironwork. Shelter may be provided on the bleak side by hanging a few Spruce boughs on during the winter months. The present is a good time to inspect poles or pergolas, and make good those that have lost their stability. Rough Larch will be found as serviceable as anything, and if creosoted at the base the poles will be much more durable. The plants may then have the growths thinned, regulated and tied in position. Standard Roses should be given fresh supports if required, and the ties examined and made secure. Give the surface soil a good dressing of decayed farm manure. Take the greatest care with freshly purchased plants to place the roots in a frost-proof position if not immediately required for planting. Should the plants exhibit any signs of dryness, it is a capital plan to thoroughly bury the whole plant, with a good depth of soil, and let it remain covered for a few days, when it will be found to have plumped up. Have a quantity of dry bracken in readiness to place round the base of the more tender varieties of Tea-scented Roses in the event of frost.

THE HARDY FRUIT GARDEN.

By A. R. SEARLE, Gardener to the Marquis of NORTHAMPTON, Castle Ashby, Northamptonshire.

Fruit tree borders.—To maintain success with wall trees of all kinds, it is essential that the borders should be prepared thoroughly at the start, and this is especially necessary in the case of stone fruits. If the planting of wall trees is contemplated, and the borders have not been prepared already, the work should be commenced without further delay. Good drainage is of the utmost importance, and even where the soil is light and the water passes away readily, it is advisable to place several inches of drainage material, such as broken bricks, clinkers, or stones at the bottom of the borders, as this will assist in preventing the soil from becoming sour. A border from 2 feet to 3 feet deep down to the drainage, and about 4 feet or 5 feet in width, is of ample size for the production of good fruits. If the subsoil is of a cold nature and very retentive of moisture, it will be advisable to drain the borders by placing 4-inch agriculture pipes just below the drainage material, close to the front of the border. They should be placed in the best position to carry off any excess of water about the roots. The drainage materials should be covered with turves, placed grass-side downwards, to prevent the finer particles of soil from filling the interstices and obstructing the passage of water. The compost should be used in a moderately dry condition. Employ chiefly, good turfy loam, with a little ordinary garden soil added if considered suitable for the purpose. A quantity of finely-divided plaster or mortar rubble from an old building should be mixed with the compost; wood ashes and burnt soil are other excellent materials to mix in a fruit tree border. A freer use of mortar rubbish should be made in the case of borders for stone fruits. The compost should be made firm by ramming or treading each layer of soil as it is placed in the trench.

General remarks.—Special attention should be given to the ventilating of the fruit room, as both Apples and Pears are keeping badly this season. Aim at maintaining an even temperature, and take advantage of fine weather to admit fresh air in the room. The fruits should be examined frequently, and any that show the least sign of decay removed, as disease soon spreads. Avoid all unnecessary handling of the fruits. Pruning should receive immediate attention, and planting hastened whenever the weather is favourable, so that work in the fruit garden may be well in hand before the end of the year.

PLANTS UNDER GLASS.

By JOHN DONOGHUE, Gardener to JOSEPH PICKERSILL, Esq.,
Bardon Hall, Westwood, Yorkshire.

Begonia corallina.—Plants of this species are now producing a very pretty display of bloom, and are attractive for house or table decoration. With the aid of bottom heat, cuttings may be rooted at any season of the year, and the plants succeed best when grown in a porous compost, consisting of lumpy fibrous loam and peat, excluding fine particles, and some broken mortar, rubble, or charcoal roughly incorporated with the soil. If a temperature of 55° to 60° is available *B. corallina* may be grown to large size specimens from cuttings rooted at the present date or early in spring. In order to induce floriferousness a certain amount of root restriction is necessary, but when the pots have become well filled with roots applications of diluted farm-yard liquid may be applied. *Begonia corallina* is also well adapted for training under the roof, in which position the flowers are displayed to the best advantage. Where it is found desirable to cultivate the plants in permanent borders for this purpose, the roots should be confined to a limited area.

Allamanda.—The plants, having completed their growth and flowering for the season, may be dried off gradually with a view to affording them a season of rest. The weaker shoots and any which appear undesirable from any cause may be pruned away. Specimens in pots or tubs may be removed into an intermediate temperature, and afforded as much ventilation as possible. They should be examined at intervals with a view to watering those requiring moisture, as the wood must not be allowed to shrivel even during the resting period. Where *Allamandas* are growing as climbers in permanent borders they may be kept as dry as convenient.

Primula.—Primulas require rather drier surroundings during the flowering season than were maintained during the period of growth. A little clear soot water weakly diluted may be applied to the roots occasionally. Extreme care must be exercised in watering, and the plants are best kept rather on the dry side during the dull season, but care must be taken to prevent excessive dryness. Where the flower spikes appear likely to fall over, they should be tied to neat green stakes. In the case of smaller sized plants a few lumps of fibrous loam pressed firmly around the base of the plants will make them secure.

Ventilation.—With the diminished light and the natural resting season, very little ventilation is required in the plant houses, but whenever ventilation is afforded care must be taken to keep the cold winds from coming into contact with the foliage. Careful attention must also be given to the heating arrangements, as sudden fluctuations in the temperatures often cause much damage.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir TREVOR LAWRENCE,
Bart., Burford, Surrey.

Winter treatment.—During winter it is necessary for the grower to keep the heat of the houses within a few degrees of what he considers to be the proper temperatures, endeavouring at all times to prevent sudden fluctuations. The temperature on light, sunny days should be a few degrees higher than on those days when the weather outside is cold and there is no sunshine. The highest temperature of every house on each day should be at about mid-day, while the lowest should be during the hours of darkness. The difference between these two extremes should be from 5° to 10° when the temperature is maintained by fire-heat alone, but several degrees higher must be allowed during intervals of sunshine. To prevent injurious fluctuations in the temperatures at night, to economise fuel, and to prevent an excessively dry atmosphere from overheated water pipes, it is advisable now to prepare coverings for the houses. These coverings may consist either of Archangel mats or waterproof canvas. The former material we have used at Burford for many years, and have found it very useful and convenient. The ends of these mats may be tied neatly and strongly, and several of them sewn together in different lengths as required for each house. They may be easily rolled along the lower part of the roof at dusk, and they should be removed at daybreak.

Where a permanent framework is raised above the glass for the blinds to rest upon, the upright pieces may, in some cases, be so inconveniently placed as to prevent rolling the mats on the roof. This difficulty may be overcome by using short, single mats, and putting them straight up each light between the rafters. As a safeguard, all coverings should be made secure in some manner, and after they have been wet or frozen, they should be thoroughly dried before using them again. We leave the lath blinds in position during winter, and they are extremely useful in very cold weather, not only in assisting to maintain equable temperatures, but, when drawn down over the coverings, they prevent the latter from being blown about. In ventilating Orchid houses through the winter, the aim should be to admit sufficient fresh air without unduly lowering the temperature or causing a chill to the more delicate plants. At Burford, we find this is best done by opening those ventilators on the ground line which are opposite the hot water pipes. Top air cannot safely be admitted where so many plants are suspended from the roof and near to the ventilators. In affording the daily supply of fresh air, the ventilators on the opposite or lee side to the wind are opened first, while those on the other side are gradually employed as the warmth increases. In a lean-to house facing due north, containing a lot of Orchids, the ventilators on the north side are kept closed whenever a north or east wind is blowing; while those on the south side are opened according to requirements. Everything should be done to expose the plants to the light, as far as it is possible, in winter. Wash all the glass both inside and out, and see that the laps in the glass are cleared of dirt, which may be loosened with a very thin, pliable piece of steel, shaped like the blade of a table knife, cleansing it out with a syringe or hose pipe. All woodwork, stages, pots, and pans should also be washed. If the brick walls are scraped clean and linewashed, it will afford a white appearance, and assist to increase the light in the houses. When washing the roof glass, see that all the stack pipes that lead into the tanks are stopped up, so that no dirty water is allowed to mix with the rain water which is used for watering the plants.

FRUITS UNDER GLASS.

By B. GOODACRE, Gardener to Sir EDWIN CASSELL,
G.C.B., Marlton Park, Newmarket.

Early Peach houses.—The trees having been pruned, cleaned and trained, as advised in previous *Chronicles*, the house may now be closed for starting. Only sufficient fire heat will be necessary at present to prevent the temperature falling below 45°. Should severe weather render the regular use of fire heat necessary, particular care must be taken to maintain a moist atmosphere, here, as the trees are very liable to drop their buds when started so early in the season, and this tendency is encouraged by a dry atmosphere. Syringe freely with tepid water on fine days, at about 1 p.m., and close the house at the same time to prevent evaporation. During dull, foggy weather an occasional sprinkling of the paths with a rose-can will be sufficient to maintain a moist atmosphere. This may be done once or twice daily, according to the amount of fire heat used. Ventilate the house freely during the early part of the day whenever the conditions are favourable, and endeavour to change the atmosphere every day. This may be accomplished during dull, sunless weather by having the hot water pipes gently heated for an hour or so about mid-day, at the same time opening the ventilators at the top of the house for about one inch. A few pot trees of reliable, early-fruiting sorts may be placed in the house at the time of starting. These, being more confined at the root than trees growing in borders, will generally ripen their fruit a few days earlier. Since they are portable, they can sometimes be hastened by placing them in a higher temperature as soon as the fruits have formed stones. Pot trees are also useful for providing more variety in a given space, as in many cases the earliest house, being small, contains only three or four permanent trees.

Later Peach houses.—The trees may be pruned as soon as the wood is nicely ripened, after which cleaning and training may receive attention. The house should at the same time be thoroughly washed, the borders topdressed, and everything

put in readiness for forcing. In most cases, Peach and other fruit houses are utilised at this season for housing Chrysanthemums and other plants. Whenever possible, these should be cleared out for a month or so before starting the trees, in order that the doors and ventilators may be flung wide open, so as to give the trees a thorough rest. Late trees now shedding their leaves may be "switched" with a handful of Birch twigs about once a week, taking care not to injure the buds or bark, merely removing those leaves which would drop if exposed to the weather.

THE KITCHEN GARDEN.

By JOHN DUNN, Kitchen Garden Foreman,
Royal Gardens, Windsor.

Forcing of Seakale.—If sufficient roots have been grown to maintain a supply throughout the winter, forcing may commence as soon as the crowns are ripe. In those establishments where only a small supply is desired, the Mushroom house provides a good place for the forcing, and 3 inch pots are the most convenient size for the purpose. Into these pots should be placed a number of crowns and the pot filled with sifted soil, pressed moderately lightly amongst the roots. If the soil is moist at the time of potting, no water will be necessary until the young shoots begin to grow, when a gentle watering should be given. In order to exclude light, a pot of the same size should be placed over the crowns in an inverted position. Where large quantities of Seakale are necessary, the best way to grow it is in brick pits provided with wooden shutters. A quantity of leaves can be used to provide the necessary bottom heat, and these should be made tight by treading. Over the bed of leaves place a 9 inch layer of light, rich soil, and plant the roots at a distance of 2 inches apart in lines 6 inches distant from each other. A spade is the best implement for this purpose, and the soil should be pressed firmly with the foot as each row is completed. The heat of the bed should not be more than 75°, or the soil will become dry and the quality of the crop reduced. At Windsor we force 14,000 crowns each year, in brick pits without fire heat.

Asparagus.—The forcing of Asparagus may commence as soon as ripe crowns are available. This is an easy vegetable to force and, if crowns are available, there need be no difficulty in maintaining a supply. Great care is necessary when lifting the roots for forcing that none is broken or exposed to cold drying winds before removal to the forcing pit. The forcing must be gentle, or the young shoots will be spindly. At Windsor we prefer hotbeds, consisting principally of leaves formed in deep pits, where a little fire heat can be applied in very cold weather. The beds should be about 4 feet deep, and they are trodden tightly as soon as fermentation commences. Over this we spread 4 inches of decomposed, farmyard manure, which is covered lightly with finely sifted leaf mould, on which the roots are placed as closely together as possible, and covered lightly with sifted soil. A watering is applied at a temperature of about 30°, or the same heat as the bed. When growth begins, and the grower knows that temperature of the bed will not rise above 30°, the whole should be covered with sifted leaf mould to the depth of 6 inches, and no more water given. A top heat of 55° is sufficient, and if this can be maintained without the use of fire heat so much the better.

French Beans.—If Beans are desired throughout the winter another sowing may be made to produce an occasional dish in the early part of January. Sow the seeds in 7 inch pots, and cover them shallowly with fine soil. When the young plants are a few inches high, move them to a position 18 inches from the glass, where the atmospheric temperature at night is 60°, rising to 70° by day with sun heat. Syringe the plants twice daily in clear weather.

Digging and trenching.—This work should be proceeded with whenever the ground is sufficiently dry, but on no account should heavy land be dug while wet. The land intended for Peas should be trenched deeply, and given a liberal supply of manure, so that the manure may become incorporated with the soil before seed time arrives. The same remarks apply to Onions.

EDITORIAL NOTICE

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Special Notice to Correspondents.—The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editors to see.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, NOVEMBER 14—

United Hort. Ben. & Prov. Soc. Com. meet.

TUESDAY, NOVEMBER 15—York Chrys. Sh. (3 days).

WEDNESDAY, NOVEMBER 16—

Scottish Hort. Assoc. Chrys. Sh. (4 days). Chester Paxton Soc. Chrys. Sh. (2 days).

THURSDAY, NOVEMBER 17—

Barnsley Chrys. Sh. (2 days).

FRIDAY, NOVEMBER 18—

Leeds Paxton Soc. Chrys. Ex. (2 days).

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich—42.6°.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, November 9 (6 P.M.): Max. 48°; Min. 31°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, November 10 (10 A.M.): Bar. 30.1; Temp. 39°. Weather—Slight mist.

PROVINCES.—Wednesday, November 9: Max. 46 Cornwall; Min. 36 England E. coast.

SALES FOR THE ENSUING WEEK.

MONDAY, TUESDAY, WEDNESDAY, THURSDAY, AND FRIDAY—

Dutch Bulbs, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.

MONDAY AND TUESDAY—

Clearance sale of Fruit Trees, &c., at Grove Park Nursery, Chiswick, by order of Mr. J. Smith, by Protheroe & Morris, at 11.30.

TUESDAY—

600 lots Roses, Herbaceous Plants, &c., at 12.30; Azaleas, Palms, and Plants at 5, at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

WEDNESDAY—

Clearance Sale of a Nursery Stock, at the Nursery, St. Albans, by order of Messrs. D. Spriggins & Co., by Protheroe & Morris, at 12.

WEDNESDAY AND THURSDAY—

Unreserved Sale of a further portion of Nursery Stock at the Tunbridge Wells Nurseries, re Thos. Cripps & Son, by Protheroe & Morris, at 11.30.

FRIDAY—

Choice Established Orchids, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

Silver-leaf Disease. The twelfth Report of the Woburn Experimental Fruit Farm contains a valuable account of the investigations carried out by Mr. Spencer Pickering on the well-known Silver-leaf disease. This disease, which, as Mr. Pickering shows, may affect such widely different plants as Plums, Peaches, Apples, Pears, Laburnum, and Portugal Laurel, is known chiefly in this country by reason of its attacks on the first-named plant. The name Silver-leaf disease—or silver blight—adequately expresses the external symptoms of the malady. The leaves of affected trees become of a silvery, or ashen-grey colour. Though the tree suffering from the disease may survive for some years, its fruitfulness is reduced very considerably, and in severe cases suppressed altogether.

Another very general, but according to Mr. Spencer Pickering not invariable symptom, consists in a dark discolouration of the wood (see fig. 152). As long ago as 1892 Professor John Percival—to whose work on Silver-leaf disease Mr. Pickering pays a generous tribute—described in the pages of the *Linnean Society's Journal* (vol. 35, p. 370) the general characters of this disease and attributed it to the activity of a fungus, *Stereum purpureum*,

which gains access to the tree through wounds in the bark.

With respect to the cause of the silvery appearance of the leaves, Percival showed that it is due to a rupture of the walls between the cells of the upper layer of the leaf. Thanks to the courtesy of the author and of the Linnean Society, we are able to reproduce the figures which were published in the paper above cited. Inspection of these figures shows that intercellular spaces (see *x* figs. 149 and 150) are formed beneath the cuticle between adjacent epider-



FIG. 146.—*STEREUM PURPUREUM* GROWING ON A DEAD BRANCH OF VICTORIA PLUM.

mal cells. On the same principle that pounded ice is white owing to the air entangled between the ice-particles, so the diseased leaf is silvery owing to the air which fills these innumerable spaces formed by the rupture or dissolution of the parti-walls between the surface cells of the leaf. Though Professor Percival brought forward strong evidence in favour of the fungous origin of the disease and demonstrated that the fructifications of *Stereum purpureum* may make their appearance on the surface of branches of Plums which have succumbed to the disease, it remained for Mr. Pickering to supply by means of experiments on a large scale final and convincing proof that *Stereum purpureum* is indeed the cause



FIG. 147.—TRANSVERSE SECTION OF THE UPPER EPIDERMIS OF A NORMAL PLUM LEAF.

of Silver Leaf. The mode of action of the fungus is remarkable. The fine mycelium or "spawn" which it produces does not appear to extend to the leaves, but to produce its effect thereon by the agency of a poison which it excretes. This poison is carried in the water-courses (vessels) of the wood, through the veins of the leaves, and produces in the latter organs the remarkable and local disorganization which we have described. A striking illustration of the distribution of the

poison responsible for the adverse effects produced by this parasite is given in fig. 151, which represents the result of an experiment made by Professor Percival on budding a sound scion on a diseased stock. The result was that the scion developed the characteristic symptoms of Silver-leaf disease. Such a mode of action is very general among parasitic

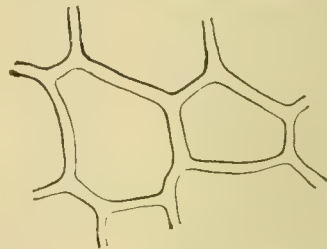


FIG. 148.—SURFACE VIEW OF UPPER EPIDERMIS OF A NORMAL PLUM LEAF.

fungi, though it is rare for such action to be evinced so far from the region in which the fungus occurs. For example, it appears probable that the deadly effects of *Botrytis cinerea* on Tulips, Lilies, &c., are due to the excretion of oxalic acid in such quantity as to poison the tissues.

Turning now to the constructive side of Mr.

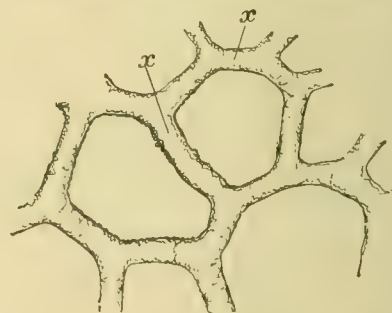


FIG. 149.—SURFACE VIEW OF UPPER EPIDERMIS OF A PLUM LEAF AFFECTED WITH "SILVER-LEAF" DISEASE.

Spencer Pickering's work, it should be remarked that he has shown that the circle of plants liable to attack by the Silver-leaf fungus is wider than was supposed. Not only are Plums and Peaches liable to attack, but also, as noted above, Pears, Plums, Laburnum and Portugal Laurel. Moreover, it is possible to inoculate one of these trees with the fungus

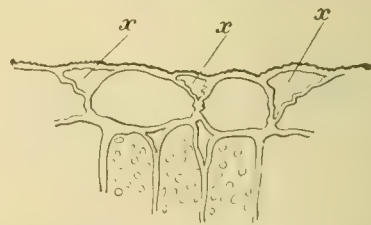


FIG. 150.—TRANSVERSE SECTION OF UPPER EPIDERMIS OF A PLUM LEAF AFFECTED WITH "SILVER-LEAF" DISEASE.

obtained from another, though inoculation experiments indicate that the *Stereum purpureum* obtained from these several hosts are not all of equal virulence.

Another point which deserves emphasis is that different varieties of Plums exhibit different degrees of susceptibility. Thus, Mr. George Bunyard's view that soft-wooded varieties are more liable to attack than harder-

wooded kinds is borne out in the case of the Victoria Plum by the Woburn experiments. For example, of Victoria and Rivers' Early Prolific planted alternately, the former were attacked and the latter remained free from the disease.

A number of other varieties are cited which have resisted attack in plantations in which the disease was prevalent, viz., Black Diamond, Jefferson, Greengage, Denniston Mirabelle, Bullace, Sultan, Prince of Wales, and Prince Engelbert. These results, which represent the experience of large growers, appear, however, at first sight to be at variance with those obtained by Mr. Pickering as the results of extended inoculation experiments. From the tables in which the results of inoculation

means of spores of *Stereum* than do the latter. In other words, though all varieties of Plums may be equally susceptible, those with soft wood offer more opportunities for infection than those with harder wood.

Perhaps the most important of all the conclusions to be drawn from the Woburn experiments is that, contrary to previous opinion, Silver-leaf disease is not an incurable malady. Mr. Pickering records a considerable number of cases in which trees attacked by Silver-leaf disease have shown themselves in subsequent seasons to be free from it, or at all events so far free as not to exhibit the Silver-leaf symptoms. Unfortunately, recovery from an attack of Silver-leaf does not confer any noticeable degree of "acquired immunity" from subsequent infection. In this respect, Silver-leaf disease falls into the category of such animal diseases as influenza and not into that which includes small-pox, &c. For whereas, in the case of the former, recovery confers no immunity, in the latter it does. Nevertheless, the fact that Silver-leaf is not necessarily mortal allows us to predict with confidence that arti-

seems possible, therefore, that the destruction is effected by an acid, for example oxalic acid, which, as we have indicated already, is held to be the agent by the excretion of which certain other fungi exercise their destructive action. If that proved the case, dressings of the soil with lime or with calcium nitrate might prove effectual in controlling the disease, for soluble lime salts passing up in the vessels would serve to neutralise the oxalic acid. Mr. Spencer Pickering's conclusions with respect to the mode by which the disease spreads from tree to tree are of great practical importance. So long as *Stereum purpureum* is in the tree it is incapable of infecting neighbouring trees. But so soon as it forms its spore-bearing "fructifications" (figs. 146 and 151) on the surface of dead branches it becomes a source of danger to all the trees of the neighbourhood. Therefore, a vigilant watch should be kept on diseased trees, and their dead branches should be removed and burned without delay.

In conclusion we may observe that we shall none of us take in bad part Mr. Pickering's chiding at the lack of scientific interest in plant-diseases which he imputes to the commercial fruit-grower. Without labouring the question, we will only say that if the scientific men—in whose ranks the present writer has a humble station—could provide the growers with more information of equal value with that contained in the twelfth Report the complaint would soon cease to have whatever measure of justification it now possesses.

MR. E. H. WILSON.—We regret to hear that an accident has befallen this well-known traveler and collector. It appears that whilst pursuing a mountain path he was overtaken by a landslip and a falling piece of rock was the means of breaking his leg. The scene of the accident was about three days journey from Cheng Tu, where medical assistance had to be procured. Mr. Wilson is now progressing favourably. His previous journeys have been singularly free from mishaps, but this accident serves to illustrate some of the dangers that explorers and collectors have to face in procuring new plants.

SOUTH-EASTERN AGRICULTURAL COLLEGE, WYE.—A meeting of the Governors of the South-Eastern Agricultural College, Wye, was held on Monday last at the Caxton House, Westminster. Lord ASHCOMBE presided. The Principal, Mr. M. J. R. DUNSTAN, reported that there were 130 students in residence. Immediate additional accommodation was required, and it was decided to erect temporary buildings for lecture rooms. The Principal also reported that a fruit growers' conference, in conjunction with the National Fruit-growers' Federation, had been arranged to be held at the college on Friday, December 2, for which invitations would shortly be issued and a programme published. The Governors resolved to apply to the Treasury for a grant from the Development Fund in aid of the work carried on by the college.

LINNEAN SOCIETY.—A meeting of this society will take place on Thursday next, 17th inst. at 8 p.m., when the following papers will be read:—1. Theoretical development of certain species of *Plantago*, by the Rev. GEORGE HENSLOW, M.A. 2. Supplementary observations on Monocotyledons derived from aquatic Dicotyledons, by the Rev. GEORGE HENSLOW, M.A.

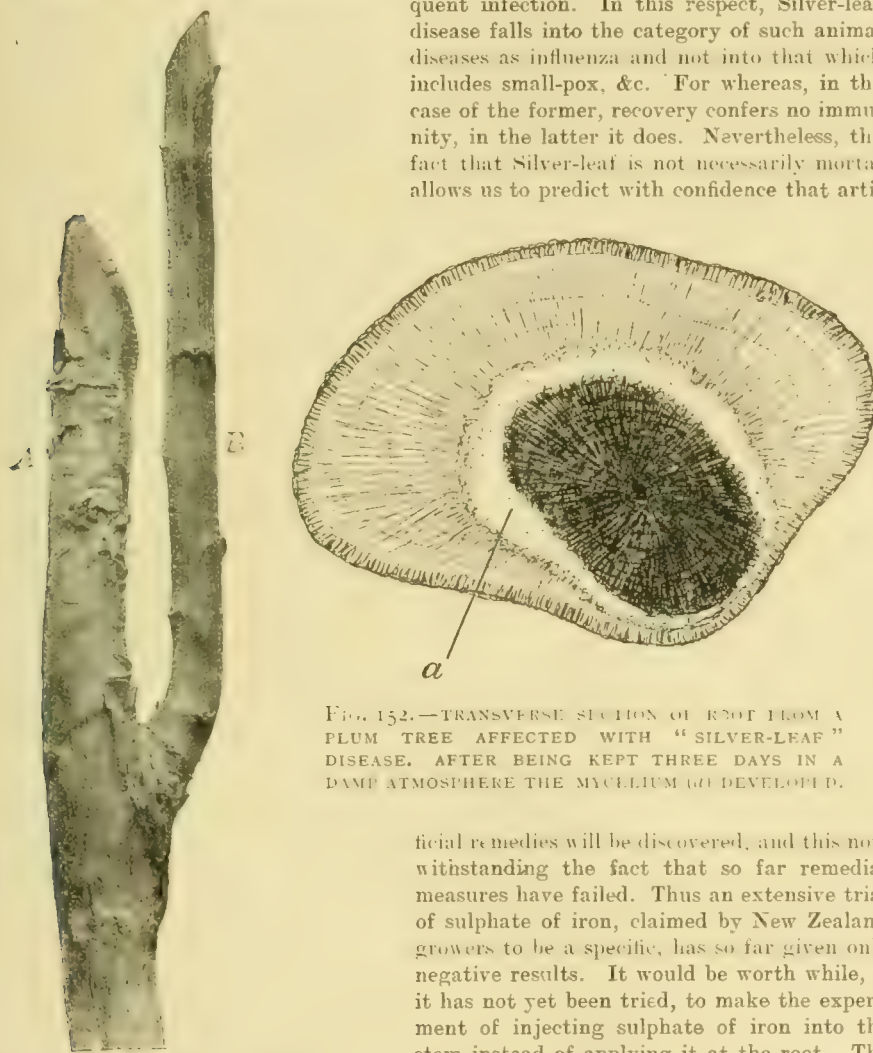


FIG. 151.—(A) DISEASED STOCK;
(B) SHOOT FROM INSERTED BUD.
ALL LEAVES OF WHICH WERE
SILVERED.

FIG. 152.—TRANSVERSE SECTION OF ROOT FROM A PLUM TREE AFFECTED WITH "SILVER-LEAF" DISEASE. AFTER BEING KEPT THREE DAYS IN A DAMP ATMOSPHERE THE MYCELIUM (a) DEVELOPED.

ficial remedies will be discovered, and this notwithstanding the fact that so far remedial measures have failed. Thus an extensive trial of sulphate of iron, claimed by New Zealand growers to be a specific, has so far given only negative results. It would be worth while, if it has not yet been tried, to make the experiment of injecting sulphate of iron into the stem instead of applying it at the root. The value of injections of iron sulphate in cases of chlorosis has apparently been demonstrated by French experimenters, and though, of course, chlorosis is an altogether different disease from Silver-leaf, the injection method might prove to be as beneficial in the latter as in the former case. Other injection experiments might well be made with such antiseptic substances as salicylic acid, of which vegetable tissues appear to be fairly tolerant. Indeed, it would appear to be very probable that if any disease is amenable to this method of treatment Silver-leaf should be amenable.

Reverting to the possible nature of the toxic substance which destroys the cell wall: it is remarkable that the layer which is destroyed is that which is mid-way between contiguous cells. Now this layer, called the middle lamella, consists of calcium pectate, and it

tests are recorded, it would appear that there is no marked difference of susceptibility between hard-wooded and soft-wooded varieties of Plums. When it is remembered, however, that *Stereum purpureum* is a wound parasite, that is one which gains access to a plant through a wound in the superficial tissues, a mode of reconciling the apparently contradictory results of experience and inoculation experiments suggests itself. For, as Spencer Pickering points out, soft-wooded trees are more liable to injury than are those with hard wood, and therefore the former provide more opportunities for the natural inoculation by

NEW ADDRESS FOR THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—We are asked to state that the offices of this institution have been removed from 175, Victoria Street to 92, Victoria Street, Westminster, S.W.

NATIONAL CHRYSANTHEMUM SOCIETY'S SHOW.—Amongst the many exhibits displayed by tradesmen at the recent Crystal Palace Show was a group of Chrysanthemums, for which Messrs. JOHN PEED & SONS, West Norwood, obtained the Society's Gold Medal.

ARBOR DAY AT EYNSFORD.—The usual festivities connected with tree-planting by the villagers of this delightful little Kentish town was celebrated on Saturday, November 5, with the usual enthusiasm. Mr. E. G. TILL, who is the moving spirit in the affair, was on this occasion supported by Sir JOHN ALEXANDER COCKBURN, K.C.M.G., late Premier of South Australia, and Mr. JOHN HENNIKER HEATON, M.P. The planting was associated with an exhibition of fruits, vegetables and flowers, and the proceedings included speeches and presentations.

WEED-SEED AND ADVERTISEMENTS.—The ingenuity of the advertiser knows no limit. Among the latest devices for securing publicity, is the printing of an advertisement on paper shaped in the form of a flying insect, and the distribution broadcast of this novel advertising flying machine. Unfortunately for the success of the method its inventor, seeking no doubt to add a last touch of reality to his paper insects attached to each the burr of *Arctium lappa*, the Burdock, and let the paper insects loose in Australia. Thus equipped the insect caught the vigilant eye of the chief quarantine officer for plants, who, according to the *Agricultural Gazette of New South Wales* (August 2), has drawn the attention of the Under-Secretary for Agriculture in New South Wales to this unique method, whereby a noxious farm weed is being distributed. As a consequence of the energetic representations of the agricultural authorities the enterprising firm will in future fly their insect kites unballasted by Burdock.

PUBLICATIONS RECEIVED.—*Hybridization Methods in Corn Breeding*, by George Harrison Shull, from *American Breeders' Magazine*, Vol. I, No. 2. (Washington.)—*Germinal Analysis Through Hybridization*, by G. H. Shull. Reprinted from the *Proceedings of the American Philosophical Society*, Vol. XLIX., No. 196. (1910.)—*Town Planting*, by A. D. Webster. (London: George Routledge & Sons, Ltd.) Price 3s. 6d.—*The Manuring of Market-Garden Crops*, by Bernard Dyer, D.Sc., and F. W. E. Shrivell. (London: Vinton & Co.) Price 1s.

FOUR NORTHERN COUNTIES FRUIT CONGRESS.

(Concluded from page 343.)

DISEASES OF FRUIT CAUSED BY FUNGI.

MR. E. S. SALMON, F.L.S., delivered a lecture on the diseases of fruit caused by fungi. He said that it is evident that a knowledge of the life history of the particular species of fungus causing a disease is of the greatest practical importance in dealing with that disease. In the life-histories of nearly all those fungi which cause diseases to cultivated plants, two distinct stages may be observed. In the first stage, the so-called "summer stage," the fungus forms enormous numbers of very minute spores, or seed-like bodies, by means of which the disease is spread rapidly, unless preventive measures are taken. To prevent these "summer-spores" from spreading the disease, the practice of systematic spraying at the right time, according to the life-history of the particular fungus, is necessary. In the second

stage, the so-called "winter stage," the fungus forms "winter-spores," produced inside various "fruit bodies." These "winter-spores" have the function of keeping the fungus alive, though in a dormant condition, through the winter months. As a general rule, these "winter-spores" are so protected by the thick walls of the fruit-body that they cannot be reached and destroyed by any spray fluid—a point of great practical importance. Various other methods—depending again on the life-history of the fungus—have to be adopted in dealing with the fungus in its "winter stage."

Inasmuch as the serious disease known as the American Gooseberry-mildew has spread recently to all of the four northern counties of England, and has reached Scotland, and outbreaks have occurred at Hexham itself, growers who are planting would be well advised to obtain their bushes only from those nurseries or growers whose bushes had been examined by an inspector of the Board of Agriculture. There is no hardship placed on the raiser of the bushes in requiring him to give such a guarantee, when selling, since such an inspection is now performed by the State free of charge. The treatment of infected Gooseberry bushes consists in well spraying the opening leaves throughout May with a fresh solution of "liver of sulphur" (one ounce dissolved in three gallons of water). Should any mildew have existed on the bush in summer, then at the end of the season all the affected shoots must be carefully cut off and burned. It is most important that this pruning should be done as early as possible in the autumn, as otherwise the fruit bodies containing the "winter-spores" drop to the ground during winter, and then in the spring these spores rise up from the ground underneath the bush and re-infect it. No winter spraying of affected Gooseberry bushes is of the slightest use. Where "returned empties" are used, these baskets should either be fumigated by placing them in a closed shed and burning sulphur, or they should be dipped in a strong liver-of-sulphur or copper sulphate solution (1 lb. to 25 gallons of water).

In the case of Apple mildew, which is sometimes a serious pest to certain varieties of Apple, e.g., Cox's Orange Pippin and Bismarck, spraying the young leaves with the liver-of-sulphur solution (one ounce to three gallons of water), is to be recommended. Practice has shown that a few good sprayings (at frequent intervals) in the early spring, when the mildew is just beginning to appear, are far more efficacious than a larger number of sprayings given at longer intervals through the summer. All mildewed tips of young shoots should be removed in pruning, or if this is impossible, the trees should be well sprayed in February with copper sulphate solution (1 lb. to 25 gallons of water).

The "Die-back" of the Gooseberry, a disease which has been very prevalent during the past two seasons, is caused by a fungus which is often a saprophyte, i.e., one which feeds on dead organic matter. This fungus enters the stem or branch, and soon causes the death of the latter or of the whole bush. A characteristic feature of the disease is the cracking and peeling off of the bark at the stem just above the ground level. Myriads of spores are produced there, and may attack the berries, leaves and young shoots. Owing to its saprophytic habit, the fungus can increase rapidly on all dead parts of the bush if such are allowed to remain in the garden or plantation. If, however, all dead branches or dead bushes are collected and burned, this disease is readily controlled without any spraying being necessary.

The successful treatment of Apple "scab" depends entirely on a knowledge of the life history of the fungus causing this disease. The "summer stage" exists chiefly on leaves, on which it forms "sooty" spots. Unless the leaves are kept clean by spraying, myriads of spores are formed at every "sooty" spot, and these are carried to the fruit by wind and rain, and a "scabby" crop is the result. If the grower keeps the leaves healthy by spraying them with

Bordeaux mixture, the Apples remain clean. This mixture should be applied first on the opening leaves just before the flowers open, and a second application should be given immediately the petals have fallen. In the case of Cox's Orange Pippin (and, possibly, Duchess's Favourite), the second spraying should be omitted, as at this time of year the foliage of a few susceptible varieties is liable to be "scorched" by Bordeaux mixture. The second important fact is that this fungus hibernates in the young wood of certain varieties of Apples—such shoots appear slightly swollen and blistered. Among varieties liable to have their young wood infested, Cox's Orange Pippin, Ecklinville Seedling, Lord Suffield, and Yellow Ingestre stand out as specially susceptible. Where "scab"-infested wood exists, a heavy spraying of the tree in February with the copper sulphate winter wash 1 lb. of copper sulphate dissolved in a wooden receptacle in 25 gallons of water, should be given. Trees of Cox's Orange Pippin which have borne "scabby" Apples should always receive this treatment, as their young wood is almost always "scabbed." Such "scabbed" wood frequently falls a victim to "canker," the ruptures in the bark caused by the "scab" probably affording an entrance for the "canker" fungus, which is a "wound-parasite."

The "scab" of Pears is caused by a fungus which has precisely the same life history as the above fungus. The young leaves of Pear trees which have borne a "scabby" crop should be well sprayed with Bordeaux mixture just before and just after blossoming. In this operation care should be taken to spray the under surface of the leaves, as it is chiefly here that the Pear "scab" fungus forms its spores. The young wood of most varieties of Pears is liable to become severely infested, and the winter-wash of copper sulphate should be given in February to all Pear trees which have borne "scabby" fruit.

The disease known as "brown-rot" affects fruit of all kinds: Apple, Pear, Plum, Cherry, Medlar, &c. In this disease the fungus causes the fruit to dry up and become "mummied"; such fruit which contains the spawn (mycelium) of the fungus in a hibernating condition, hangs firmly attached to the tree through the winter months, and then in the following spring produces an immense number of spores which infect the flowers and young fruit. All dried-up fruits—even when they are reduced apparently to merely a stone, as in the case of Cherry and Plum—hanging on the branches should be collected during the winter and burned.

With respect to Bordeaux mixture the strength for use on fruit trees should be 4 lbs. copper sulphate, 4 lbs. quicklime (in lumps), 50 gallons of water. The quicklime should be slaked with a small quantity of water until a thick, creamy paste is obtained; then dilute with water into "milk of lime" of make 46 gallons. The copper sulphate is previously dissolved in four gallons of water in a wooden receptacle. The two are then poured together, when 50 gallons of Bordeaux mixture of the best quality are obtained. Bordeaux mixture cannot be kept for long, and should be used not longer than 24 hours after being made. Separate "stock solution," however, of lime and of copper sulphate can be made of the strength of 1 lb. of quicklime or of copper sulphate to one gallon of water; the stock solution of lime must be well stirred before being used. Such stock solutions can be kept throughout the summer spraying season, and the required quantity of Bordeaux mixture can be made from them at any one time in a few minutes. The one point to remember is that freshly-burnt quicklime in lumps is required; air-slaked, powdery lime will not make Bordeaux mixture, and causes severe "scorching." The mixture must be strained through a fine "copper gauze" strainer, and applied by a nozzle which throws a very fine "misty" or smoke-like spray. Arsenate of lead—which protects foliage from all leaf-eating insects, can safely be added to Bordeaux mixture.

"FRENCH" GARDENING.

The Rev. T. FITZGERALD read a paper on "French Gardening," in the course of which he stated that he believed there was a great future for the practice in this country.

BEEES AS AN AID TO FRUIT CULTURE.

Mr. G. W. AVERY read a paper entitled, "Bees as an Aid to Fruit Culture." He related several experiments which he had carried out in conjunction with the Cumberland County Council. Various bushes and Apple branches were protected from the visits of insects during the time of flowering, with the result that they never set their fruits. On a branch of an Apple tree of Early Victoria the flowers were left exposed for a few days, and eventually covered with muslin, the fruit, however developed and came to maturity, although the muslin was left on until August. This was proof that the fact of the branch being covered did not prevent the development of the Apples once the flowers were fertilized. Mr. Little explained the photographs which were shown on the lantern screen.

SMALL HOLDINGS.

Mr. W. F. EMPTAGE said that great care was needed in the selection of land for fruit culture on a small holding.

The saying that a family could make a living from two or three acres of Strawberries was pure fiction.

Landlords and land companies frequently offered land which was exceedingly dirty, with the result that the unwary were trapped.

He suggested that in order to safeguard the interests of small holders, landlords might combine, or companies be formed to provide out of their estates suitable holdings for fruit culture.

CO-OPERATION.

Mr. W. CLAYTON, secretary of the Northern Co-operative Society, read a paper on "Co-operation in the Marketing of Produce." He dealt with the subject in a general manner, and said what was done in ordinary co-operative societies was applicable to market growers.

Mr. H. H. MASON read a paper on "Co-operation in the Marketing of Fruit and Market Produce." He stated that the great problem to solve is the means whereby all the advantages of unity may be secured without the sacrifice of individual initiative. The price put upon a bushel basket of Apples was generally in accord with the poorest specimen that could be picked out of the parcel; the levelling tendency was ever prone to be downward. It was possible to carry combination to a point that encourages abuses. Much, however, could be done in this direction before any point of conflicting interest was reached, and, in face of ever increasing competition from Continental countries, where scientific organisation was an everyday thing, some measure of co-operation is absolutely vital to the existence of small growers.

An essential factor towards success in co-operation is to realise that the power of combination can only be accomplished by each man recognising his responsibility to his associates.

He concluded by giving the history and work of various co-operative market-growers' societies, and suggested that each member who betrayed his society by not dealing squarely should be subjected to a very heavy fine or expulsion from the society.

Mr. W. FEARNSIDE, hon. sec. to the Pershore Co-operative Fruit Market, gave particulars as to the progress of that society.

He said that market growers as a rule were reluctant to combine when the formation of his society was first mooted; they inquired as to the probable value of the produce that was likely to be sent to market. The only estimate growers would give was one for £500.

As this was not sufficient to warrant the necessity of the establishment of a market, a private gentleman came forward and offered to guarantee loss to the value of the sum already mentioned.

The fruit market was then formed, and directly the growers saw that good prices were obtained they supported the movement, and the sales during the first six months amounted to £4,700.

SOCIETIES.**ROYAL HORTICULTURAL.**

NOVEMBER 8.—Compared with recent exhibitions the show on Tuesday last was much smaller than usual. There was an almost entire absence of hardy flowers, including Dahlias, and practically nothing came before the notice of the FRUIT AND VEGETABLE COMMITTEE, although this body granted an Award of Merit to an Apple named Ard Cairn Russet, an old local, Irish variety. There was a good average display of Orchids for the time of year, and the ORCHID COMMITTEE granted one First-class Certificate and two Awards of Merit. The principal exhibits in the floral section were displays of Ferns, Begonias, Carnations, Chrysanthemums, and ornamental-leaved shrubs. The FLORAL COMMITTEE granted three Awards of Merit, two to Chrysanthemums and one to a cerise-coloured Carnation of the perpetual blooming type.

At the three o'clock meeting in the lecture room, an address on "Observations on the Blossoming of Hardy Fruits" was delivered by Mr. Cecil H. Hepner, of Wye College.

Floral Committee.

Present: W. Marshall, Esq. (in the Chair); and Messrs. H. B. May, James Walker, C. T. Drucery, G. Reuthe, W. J. James, Chas. E. Shea, W. P. Thomson, C. E. Pearson, E. H. Jenkins, W. J. Bean, E. A. Bowles, R. Hooper Pearson, Jno. Green, T. W. Turner, R. C. Neville, C. B. Blick, J. F. McLeod, James Douglas, C. Dixon, Herbert Cutbush, J. T. Bennett, the James Watsons, George Paul, R. C. Notcutt, and W. Cranfield.

Messrs. J. HILL & SONS, Edmonton, showed a group of specimen Ferns, the exhibit having a frontage of 70 feet run. The display embraced 100 choice specimens, representing most of the genera cultivated under glass. Along the middle were tall tree Ferns at intervals. In the centre was a fine plant of *Dicksonia Schröderi*, the fronds having a spread of more than 14 feet. There were also large plants of *Dicksonia squarrosa* and *Urethra* *Sp.*. We noticed a fine plant of *Polypodium atriplicatum*, the specimen having numerous finely crested fronds. There were also large examples of *Davallia robusta*, *D. Mooreana*, and *D. bipennis* *elegans*. Amongst these with coloured fronds, *Lomaria L'Hermieri* and *L. atriplicata* attracted notice. We also observed a remarkably fine specimen of *Nephrolepis exaltata* *superba*, a choice *Selaginella* in *S. Emarginata*, *Asplenium Nidus avis*, the *Pinus* *Need* Fern, *Erasmia insignis*, and many other fine varieties. (Gold Medal.)

Messrs. H. B. MAY & SONS, The Nurseries, Edmonton, exhibited a representative collection of British species of *Polypodium*. They were all crested and plumose varieties, with the exception of the type plants. It was interesting to see the development of tasselling and other pinna ramifications in the several kinds. The more notable were *P. cambricum* *Barrowii*, *P. c. Prestonii* (the gem of the collection), *P. trichomanoides* with fronds like the Killarney Fern, *P. vulgare* *grandiceps* *Foxii*, *P. v. g. Forsteri* both with heavily crested foliage, and *P. polichromum* (the pinnae being all enlarged and elegantly subdivided). Adjoining the Ferns, the same firm showed varieties of *Begonia* of the *Gloire de Lorraine* type, the most distinct being the form known as *rosea crispata*. (Silver Bankian Medal.)

Messrs. W. CUTBUSH & SON, Highgate, London, filled two long tables, facing each other, with flowering and ornamental plants. One was occupied exclusively with greenhouse subjects, amongst which were many *Dracenas*, Palms, Ferns, and *Eriens*. In the centre was a batch of Orange trees in fruit, and on either side batches of Lilies in flower, grown from retarded bulbs. Groups of *Astilbe*, Lily of the Valley, *Aralia elegantissima*, and *Daphne indica rubra* were other features. The display on the other table embraced hardy plants arranged in a rock-garden, a few Chrysanthemums, and *Michaelmas* Daisies, and a showy group of Carnations. The Carnations were very numerous, and afforded a striking display of colours. The variety *Lord Rothschild* is dark-crimson, like the old *Glove*, and has much of the exquisite perfume of that old favourite. In addition the flower is of

good form and the stem long and stout. Miss Winnie Prior is a white-ground Fancy, a large, bold flower, striped sparingly with red. Mrs. Fortescue is a bright cerise-coloured variety; Lady Elphinstone is one of the newer pink sorts, a lovely bloom; May Day, pink, is one of the best-formed of all the perpetual-blooming Carnations, being a desirable variety in every respect; Victory is a striking scarlet flower, and others of note shown well included White Perfection, Lady C. Waring (yellow-ground Fancy), Lady Coventry, and Mrs. Burnett. (Silver Flora Medal.)

MESSRS. JAMES VEITCH & SONS, LTD., Chelsea, arranged another fine group of winter-blooming Begonias, having the plants finer than ever. The trusses of rose blooms of the variety *Elatior* formed large posies; *Ideala* has a rather different habit, the inflorescences being produced mainly from the axils of the leaves and forming pyramids of bloom. Mrs. Heal, Julius (pink), and Ensign are all desirable and free-flowering varieties. At one end of the table was a group of *Jacobinia chrysostephana*, and, at the other, varieties of *Gerbera Jamesonii*. The latter were of most shades of colour, there being blooms of white, pink, salmon, rose, bronze, orange, scarlet, and other shades, a delightful selection. Messrs. Veitch also showed pot plants of Chrysanthemums, filling a large table with well-grown specimens. Miss May Pope (pink), Lady Smith (rose), Mrs. E. Notell (yellow), *Falun* (bronze), *Metta* (crimson), and *Devonshire Queen* (white) are suitable single varieties of their respective colours for cultivation in small pots. Of Japanese sorts, *Hutchings's Pink*, *Felton's Favourite* (white), *Soleil d'Octobre* (yellow), and *John Shrimpton* (crimson) were all good. (Silver Bank Flora Medal.)

MESSRS. STUART LOW & CO., Bush Hill Park, Enfield, showed Carnations and a few greenhouse plants, the latter including *Cyclamens*, *Daphne indicum*, *Correa cardinalis*, and *Asparagus myriophyllus*. The Carnations embraced extra choice blooms of the beautiful *Lady Alington* variety, which received an Award of Merit recently. May Day was shown well; *Roseate Dawn* has delicate pink flowers; *Fireglow* is a showy yellow ground Fancy, the markings of orange-tint being very heavy. An epergne filled with *J. Whitecombe Riley* (yellow) and *Royal Purple*, with Fern fronds, gave a pretty contrast in shades. (Bronze Flora Medal.)

Messrs. H. CANNELL & SONS, Swanley, Kent, exhibited plants of a Zonal *Pelargonium* named *Salmon Paul Crampel*, recommended as a first-rate bedding variety. The growth and foliage are vigorous, and resemble the well-known bedder *Paul Crampel*, from which it is stated to be derived as a sport.

Mr. G. LANGE, Hanworth Road, Hampton, Middlesex, showed a small group of Carnations. There were three varieties of more than average merit; these were *May Day*, *Scarlet Glow*, and *Shasta* (white).

Mr. L. R. RUSSELL, Richmond, showed some exceedingly pretty foliage and berried plants as small specimens in pots. It is remarkable how effective are small Ivies of golden and silver-leaved varieties in small pots and when grown so well as by this exhibitor. The various species and varieties of *Elaeagnus* are also charming as pot plants, such as *E. glabra aurea*, *E. Simmii* *variegata*, *E. pictus aurea*, *E. aurea maculata*, and *E. medio picta*. *Pernettya* and *Aucubas* in berry and large-flowered *Veronicas* found a place in the exhibit. (Silver Bankian Medal.)

A large floor group of Chrysanthemums was arranged by Messrs. JOHN PEED & SON, West Norwood, London. At the back was a row of tall *Kentias* overhanging large blooms of Japanese varieties; next to these were staged single varieties, intermingled with large blooms of exhibition varieties, tall epergues at the corners and in the immediate foreground being also filled with blooms. The more notable varieties were *W. Mease*, *Willie Rawlings* (yellow), *Miss Cora Stoop*, *Emblème Poitevine*, *Buttercup* (incurved), *Mrs. Chas. Penford* (yellow), *Mrs. J. W. Cole* (white), *Mrs. R. D. Eves* (blush), *Reginald Vallis*, and *Leigh Park Wonder* (red). (Silver Bankian Medal.)

Messrs. CARTER, PAGE & CO., 52 and 53, London Wall, showed Chrysanthemums, a bright batch of the scarlet-flowered *Salvia Pride of Zurich*, and bowls for growing bulbs in fibre. The Chrysanthemums included Japanese varieties of large exhibition sorts, shown in bunches

in vases, and an assortment of singles. We noticed the old *Sœur Melaine* (white) once extensively cultivated in market nurseries. Model of Perfection is a pretty Pompon variety. (Silver Flora Medal.)

Messrs. W. WELLS & Co., Merstham, Surrey, exhibited a stand of large blooms of Japanese Chrysanthemums and vases of novelties in singles and Pompons. A pretty Pompon Chrysanthemum was seen in the variety *Ada Vincent*, the rose and bronze colours making a pleasing combination. *White Baby* is a miniature-flowered Pompon. *Lady Bedford* is a new single variety of pale terra-cotta colour.

Messrs. G. WILLIAMS & SONS, Manor House Nurseries, Cardiff, showed Chrysanthemums, mostly of single kinds. The large-flowered single *Caledonia* was conspicuous, the big rosy-pink florets having a little white at their bases. *Florrie King* is a smaller flower of pink colour; *Archie*, bronze; *Mrs. W. Parker*, white; *Sylvia Slade*, rosy-crimson, with a white ring in the centre; *Charles Greeves*, creamy-yellow; and *Manor House Terra Cotta* are other good single varieties observed in the exhibit.

Mr. G. REUTHE, Keston, Kent, showed Alpines in pots, a selection of *Nerines*, and a few foliage plants at the back. The rare and new *Ranunculus Enysii* from New Zealand was represented by a good plant; *R. insignis*, from the same country, was also shown; both are yellow-flowered species. *Androsace sarmentosa primuloides* is a pretty plant, even when not in bloom, resembling green buttons set in a paler green rosette. The *Nerines* were hybrids in various colours, and all had been grown in cold frames, where they flower well.

Messrs. BAKER'S, Wolverhampton, showed fancy vases and bowls of uncommon designs, suitable for growing bulbs in moss fibre.

Paintings of floral subjects, shown by Mr. FRANK GALSORTHY, Chertsey. (Silver Banksian Medal.)

AWARDS OF MERIT.

Curnation Mrs. C. W. Ward.—This variety belongs to the perpetual-flowering type. It has reddish-rose coloured flowers of good size, but only moderate form as exhibited. Shown by Mr. S. LANGE, Hampton.

Chrysanthemum Mrs. Frank Hill.—A very refined variety with mauve-coloured flowers, having a white band around the disc. Shown by Messrs. WILLIAMS & SONS, Cardiff.

Chrysanthemum Victorian.—This is a large-flowered Japanese variety, suitable for exhibition; the florets have a bronzy-yellow ground colour, but this is almost covered with reddish-mauve. Shown by Messrs. STREDWICK & SON.

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the Chair); and Messrs. Jas. O'Brien (hon. sec.), Harry J. Veitch, H. Little, R. G. Thwaites, F. J. Hanbury, F. Menteith Ogilvie, C. H. Curtis, W. Cobb, F. Sander, J. Charlesworth, J. Cypher, W. H. Hatcher, H. G. Alexander, W. H. White, H. Ballantine, Gurney Wilson, J. Wilson Potter, R. Brooman-White, W. Bolton, C. J. Lucas, and de B. Crawshaw.

Lieut.-Col. Sir GEORGE L. HOLFORD, K.C.V.O., Westonbirt (gr. Mr. H. G. Alexander), staged a small group of very fine hybrids, in which were *Cattleya Portia gigantea* (a very fine variety with a large head of bloom), *Lælio-Cattleya Arethusa* (a pretty and profuse flowerer), *L.-C. Barbarossa* (with glowing ru y-red front to the lip), the handsome *L.-C. Olivia* (see Awards), and *Cypripedium Beacon superbum* (J. Howes × *nitens*-*Lecanum*).

Sir JEREMIAH COLMAN, Bart., V.M.H., Gatton Park (gr. Mr. Collier), staged a small group of very interesting plants, including the singular *Bulbophyllum mandibulare*, a fine specimen of *B. Ericssonii*, the greenish *Dendrobium epidendropsis*, *D. Coelogyne*, *Liparis longipes* with many graceful sprays, *Epidendrum nocturnum*, a pretty little *Cirrihopetalum* with an umbel of rose coloured flowers, and two good examples of his fine white *Phaio-Calanthe Colmani*.

R. G. THWAITES, Esq., Chessington, Christchurch Road, Streatham. (gr. Mr. J. M. Black), was awarded a Silver Banksian Medal for a selection of his pretty *Odontodas*, in which were some rich scarlet *O. Bradshawia*, a very deep red *O. Charlesworthii*, and the pretty new *O. Seymourii*. *Sopbro-Cattleya Wellesleyae perfecta* (*S. grandiflora* × *C. labiata* R. L. Measures) was

a charming, broad-petalled flower, red on a yellow ground, and with a slight bloom over the surface, as seen on ripe Grapes. Others specially good were *Cattleya labiata alba*, *C. Maggie Raphael alba*, and a very striking and sparsely-spotted form of *Odontoglossum Rolfeae*.

E. R. ASHTON, Esq., Camden Park, Tunbridge Wells, was awarded a Silver Banksian Medal for a small but select group, in which were the very pretty *Cattleya Luegeae* Broadlands variety, of fine form and lighter in tint than the original; *C. Phrygia* (*Portia* × *Enid*), a large magenta-rose hybrid; *Lælio-Cattleya Mrs. Temple* (L.-C. Hy. Greenwood × *C. Mossiae*); *L.-C. Phœbus* (L.-C. Cappei × *C. Iris*), a very bright and effective flower, reddish-copper colour, with a deep red lip, and various *Brasso-Cattleyas*.

Mrs. NORMAN COOKSON, Oakwood, Wylam (gr. Mr. H. J. Chapman), sent *Cypripedium Oakwoodense*, of unknown parentage, bearing some resemblance to a dark *C. Fulshawense*; *C. Arthurianum* Oakwood variety (*insigne* *Sanderæ* × *Fairrieanum*), with light yellow ground colour, and *Calanthe Cooksoniae gigantea* (see Awards).

FRANCIS WELLESLEY, Esq., Westfield, Woking (gr. Mr. Hopkins), sent as *Lælio-Cattleya Ville de Bruxelles* (L.-C. *callistoglossa* × L.-C. *Clive*), a very handsome bluish-tinted flower with very broad and rich ruby-tinted lip, to which the Committee awarded a First-class Certificate, but after comparison with the drawings of L.-C. *Epicasta*, they decided was a fine variety of that hybrid, and the certificate was withdrawn. Mr. WELLESLEY also showed *Sopbro-Lælio-Cattleya Thalia* (*S. grandiflora* × L.-C. *Cappei*), with a spike of several bright-red flowers.

Messrs. CHARLESWORTH & Co., Haywards Heath, were awarded a Silver Flora Medal for a fine group, in which the principal plants were some very showy *Cattleya Rhoda*, two very dissimilar *C. Venus*, the one shaped like a large *C. Iris*, but of a deep golden-yellow, and the other like *C. aurea* in form; *C. Luegeae*, *C. Fabia alba* with pure white petals, *C. labiata alba*, *Lælio-Cattleya Eurydice*, and other *Lælio-Cattleyas*; a selection of *Cypripediums*, including *C. Rossettii*; *Chondrorhyncha Chestertonii*, and *C. fimbriata*; the curious and rare *Zygopetalum Binotii*, near to *C. Murrayanum*; the pretty purple-spotted *Rodriguezia Batemanii*, some hybrid *Odontoglossums*, one of the prettiest being the pure white *O. ardentissimum xanthotes*; *Cœlogyne Veitchii*, with a long, pendulous raceme of white flowers, and the pretty *Polystachya paniculata*, with a branched, erect inflorescence of a dark orange-red colour.

Messrs. SANDER & SONS, St. Albans, were awarded a Silver Flora Medal for an extensive and varied group, in the centre of which were several specimens of *Vanda carulea*, and a fine selection of blotched *Odontoglossums*, some of which were spotted forms of *O. crispum*. The best plant in the group was the very fine *Cypripedium Dreadnought*, illustrated in the *Gardeners' Chronicle*, December 5, 1908, p. 369. In the centre was a selection of pretty botanical Orchids, comprising *Eria marginata*, some singular *Polystachyas*, *Walwewa pulchella*, *Bulbophyllum Dearei*, *Ionopsis paniculata*, *Promenæa xanthina*, &c., and in the body of the group were some handsome *Cattleyas*, and *Lælio-Cattleyas*, the most novel being L.-C. *Walter Gott* (*C. bicolor* × L.-C. *Blechnleyensis*), with a very attractive spike of flowers of a delicate apricot-yellow tint, with a slight rose shade and with a well-displayed ruby-purple lip; L.-C. *Black Prince*, the white-petalled *Cattleya Cooksoniae* *C. Mary Measures alba*, &c.

Messrs. STUART LOW & Co., Bush Hill Park, secured a Silver Flora Medal for a good group rich in bright yellow *Oncidium varicosum*, one form not having the usual dark markings on the sepals and petals. *Odontoglossum Pescatorei* and *O. crispum*, white varieties of *Cattleya labiata*, a very good selection of *Cypripediums*, *Dendrobium Phalaenopsis*, *Lælio-Cattleya Decia* and other *Lælio-Cattleyas*, *Cymbidium Tracyanum*, some good hybrid *Odontoglossums*, &c., were also shown.

Messrs. J. CYPHER & SONS, Cheltenham, staged a very select group of *Cypripediums*, for which a Silver Flora Medal was awarded. The plants were splendidly grown and finely flowered, and among those noted were a very large and handsome *C. Fulshawense*, *C. Minos Veitchii* variety, a distinct new hybrid between *C. Swinburnei* and *C. Leeanum*; the dark *C.*

Tityus superbum, *C. Mr. F. Sander*, a well-formed flower; *C. Baron Schröder*, *C. Leeanum corona*, *C. Thalia gigantea* in excellent form, some fine *C. insigne* *Sanderæ*, *C. insigne* *Harefield Hall*, and other forms of *C. insigne*. The group contained about 60 distinct varieties, all of good quality.

Messrs. W. BAYLOR HARTLAND & SONS, Ardcairn, Ballintemple, Co. Cork, were awarded a Silver Flora Medal for a very fine and interesting group composed largely of good hybrids of *Cattleya Bowringiana*, which seems to thrive with them in a remarkable degree, the hybrids growing almost continuously and producing fine heads of bloom. Among the finest were several excellent *Lælio-Cattleya Parysatis* of fine rose-purple colour, one having 11 flowers on a spike; *Cattleya Portia*, equally good; the pretty *C. Chloris* (*Bowringiana* × *maxima*), which varies considerably, but always suggests *C. maxima*, one fine form with a broad, white margin to the lip being specially distinct; several forms of the floriferous *C. Brownia*, *C. suavior delicata*, a large, light flower; *C. Mantinii*, *C. Lord Rothschild*, together with good *C. labiata*, *Cypripedium insigne* *Sanderæ* *C. insigne* *Mrs. F. W. Moore*, and other yellow varieties; *C. Swinburnei magnificum*, various *Odontoglossums*, including two *O. Groganæ* (*Edwardii* × *Uro-Skinneri*), with long, branched spikes of rose-purple flowers, the lip being the lighter, and other showy Orchids.

Messrs. ARMSTRONG & BROWN, Tunbridge Wells, were awarded a Silver Banksian Medal for a select group, in which were *Brasso-Cattleya Thorntonii* var. *Boydia*, a fine, white flower with a pearly flush on the tips of the sepals and petals and a greenish-primrose disc to the fringed lip. Among others noted were a fine *Cattleya Fabia*, *Cypripedium Fowlerianum magnificum* of a very dark colour, *C. Germaine Opoix*, the distinct *C. Lord Roberts*, with a yellow ground colour having dark spotting; *C. triumphans*, the handsome *C. Niobe Westonbirt* variety, *Cymbidium Lady Colman*, several of the pretty *Cattleya Armstrongia*, and other handsome hybrids.

SAMUEL LARKIN, Esq., Ridgeways, Haslemere (gr. Mr. Hale), staged a small selection of hybrids, the most distinct of which were *Cattleya Portia Larkins* variety, a model flower in shape and of good size, the sepals and petals being of a clear, rosy-mauve colour, the front of the lip rose-purple; a good form of *Lælio-Cattleya eximia*, a well-flowered *Lælia splendens* (*crispa* × *purpurata*), with pale, rose-tinted sepals and petals and very bright, purplish-crimson front to the lip; *Cattleya Wavriniana* (*Warszewiczii* × *granulosa* *Schofieldiana*), and *C. Zeo* (*Trianae* × *Leopoldii*).

Messrs. J. & A. A. McBEAN, Cooksbridge, showed a magnificent *Cattleya Portia* with 15 flowers on a spike, several *Cypripedium insigne* *Sanderæ* and *C. insigne* *Harefield Hall*; also a good hybrid between *C. insigne* *Harefield Hall* and *C. nitens*, and a bright-scarlet *Sopbro-Cattleya Doris*.

Messrs. STANLEY & Co., Southgate, showed an interesting selection, among which was the fine *Cattleya labiata virginea*, a large flower with pure white sepals and petals, having a slight lavender tint at the tips, the very distinct lip having a light, mauve-purple front and pale-yellow disc. Messrs. STANLEY also showed *Lælio-Cattleya Whitiniae* (L. *purpurata* × *C. Harrisoniana*), L.-C. *Gottoiana*, the pretty *Cattleya St. Gilles*, *C. Fabia*, *C. labiata eximia*, a good dark form; several of a cross between *C. Forbesii* and *C. Mossiae*, and a very handsome *Lælio-Cattleya Lady Rothschild*.

Monsieur MERTENS, Ghent, showed a selection of hybrid *Odontoglossums*, one violet-coloured form being specially distinct.

AWARDS.

FIRST-CLASS CERTIFICATE.

Sopbro Cattleya Doris Cobb's variety (*C. Dowiana* × *S. grandiflora*), from WALTER COBB, Esq., Normanhurst, Sussex (gr. Mr. C. J. Salter).—A superb flower, the largest and best yet shown of this showy hybrid. The colour is bright scarlet with yellow base to the lip.

AWARDS OF MERIT.

Lælio-Cattleya Olivia (L. *Jongheana* × *C. Schröderæ*), from Lieut.-Col. Sir GEORGE L. HOLFORD, K.C.V.O., Westonbirt (gr. Mr. H. G.

Alexander).—A very fine hybrid with equally broad segments of fine substance. Sepals and petals of a delicate peach-blossom tint with pink veining, the greater part of the lip being deep orange with rose tinted margin.

Calanthe Cooksonia gigantea (vestita rubro-oculata gigantea × Harrisii), from Mrs. NORMAN COOKSON (gr. Mr. H. J. Chapman).—In this beautiful, pure-white hybrid the broad-lipped form of *C. Harrisii* is retained and enlarged.

Fruit and Vegetable Committee.

Samples of a Chutney shown by Mrs. MILLER at a previous meeting, having been submitted for tasting and being recommended for its excellent flavour, the Committee granted a Silver Knightian Medal to the exhibitor.

AWARD OF MERIT.

Apple Ard Cairn Russet.—This is an old variety of Apple growing in the Ard Cairn Nursery of Mr. BAYLOR HARTLAND, Cork, the age of the tree being estimated at nearly 200 years. The fruits are of handsome russet appearance, with a considerable amount of red. The shape is conical, the base being much broader than the apex. The flesh is solid and the fruits have the appearance of keeping in good condition late in the season. A dessert variety of considerable beauty. Shown by Messrs. BAYLOR HARTLAND & SONS, Cork.

MARLOW CHRYSANTHEMUM.

OCTOBER 26.—The second annual show of this society was held on this date in the Public Hall, Marlow, and was attended with great success. Mr. L. F. Smith, Junr., ably discharged the duties of hon. secretary and treasurer, and is to be congratulated on the results.

H. F. SLATTERY, Esq. (gr. Mr. R. Evans), gained many successes. He entered in six classes, and carried off the premier award in each. In the open class for a display of Chrysanthemums, designed with the purpose of showing the decorative value of the blooms, he was an easy 1st with a fine exhibit. The prize carried with it the winning of Sir Alfred Cripps's Challenge Cup, which the same exhibitor won last year. It now becomes his own property. He was also 1st for a splendid group of outdoor blooms; for a collection of 12 Japanese blooms; for three blooms; for incurved varieties; and he won the premier award for a display of flowers other than Chrysanthemums.

In the amateur classes, Mr. A. DAVIS, Senr., won Lady Higginson's prize for a display of outdoor flowers.

The cottagers made a very creditable show, and to Mr. G. DEAN fell the honour of winning Mr. W. J. Morgan's prize for the best exhibit in the amateur and cottagers' classes.

The entries in the ladies' classes were very effectively and artistically arranged. In that for table decoration, the 1st prize was won by Miss BROADBENT, Mrs. JORDAN being awarded the 2nd prize.

Mr. T. BLACKMORE, florist, of Springfield Gardens, Marlow, was deservedly awarded the 1st prize and the Royal Horticultural Society's Silver-gilt Medal for the best exhibit (open to the trade only) of Chrysanthemums, arranged for effect, with ornamental foliage and Palms.

COMMONS AND FOOTPATHS PRESERVATION.

OCTOBER 28.—Lord Eversley presided over the monthly meeting of the Commons and Footpaths Preservation Society, held on the above date. It was decided to invite the other open-space organisations to combine with it in issuing a circular recommending that, where necessary, village memorials of the late King's reign should take the form of the provision of recreation grounds or other open spaces. Also that kindred societies be invited to make a united protest against the fencing in of over an acre of Hampstead Heath to form a rubbish tip. The secretary reported that Lord Eversley's history of the movement for the preservation of commons, forests and footpaths was about to be issued at the instance of members of the Commons and Footpaths Preservation Society, who had contributed a large sum as a mark of respect to their president in order that the book might be circulated at a low price.

HEREFORDSHIRE FRUIT AND CHRYSANTHEMUM.

OCTOBER 26, 27.—This society held its nineteenth annual show on these dates in the Shire Hall, Hereford. Notwithstanding the unfavourable fruit season the numerous classes were well filled with produce of excellent quality, apart from exhibits of hardy fruits there were displays of Grapes, vegetables, Chrysanthemums, agricultural roots, and grain, together with trade exhibits.

FRUIT CLASSES (Open).

APPLES.—In the class for 50 dishes, arranged with foliage decorations, on a space of 70 square feet, the KING'S ACRE NURSERY Co. showed the best of five exhibitors. Amongst this firm's choicer dishes those of Allington Pippin, Rival, Lord Hindlip, James Grieve, Werder's Golden Reinette, Cox's Orange Pippin, Charles Ross, Hector McDonald, Tyler's Kernel, King Edward VII., Lawry's Cornish Giant, Warner's King, Lane's Prince Albert, Newton Wonder, Coronation, and Royal Jubilee may be mentioned. 2nd, Mr. CADDICK, Caradoc, Ross, whose exhibit was particularly strong in kitchen varieties. 3rd, Mrs. HILL, Moreton Court (gr. Mr. W. Jones).

J. RILEY, Esq. (gr. Mr. H. Taylor), was the only exhibitor of 30 dishes, arranged in a space of 40 square feet. He staged a meritorious collection, including Christmas Pearmain, Sturmer Pippin, Worcester Pearmain, Ross Nonpareil, James Grieve, King of the Pippins, Allington Pippin, Annie Elizabeth, Emperor Alexander, and others.

Seven good exhibits were staged in the class for 12 culinary varieties, the best by Messrs. GETTING & C. NEWTON, Glewstone Court, Ross (gr. Mr. Kelly), who showed Lane's Prince Albert, Lord Derby, Warner's King, Bismarck, Peasgood's Nonesuch, Hambling's Seedling, Sandringham, Bramley's Seedling, Stirling Castle, Scarlet Custard, Emperor Alexander, and Newton Wonder. 2nd, Capt. W. S. C. COX, Sellack Fruit Farm (gr. Mr. C. Thomas). 3rd, Rev. G. H. DEVONPORT.

Messrs. NEWTON were also placed 1st for eight dishes of dessert Apples amongst seven exhibitors. Mrs. BASHILL, Bridge Sellons, followed.

DECORATIVE GROUP OF FRUITS.

This was for preserved or fresh fruit, arranged in a space of 50 square feet. It made an attractive class, in which three exhibitors took part. The KING'S ACRE NURSERY Co. was placed 1st with a fine stand, composed of Apples and Pears, arranged in dishes and boxes, dishes of Peaches, and a grand display of bottled fruits, with a background of fruit trees in pots. Mr. CADDICK was awarded the 2nd prize for a good exhibit, of which a fine assortment of Apples was the chief subject. 3rd, Messrs. PEWIRELS BROS., Tillington Nurseries.

The best dish of kitchen Apples in the show was exhibited by Capt. W. S. C. COX (gr. Mr. C. Thomas). The variety was Lane's Prince Albert, and he also showed, in a dish of Cox's Orange Pippin, the best dessert Apples in the exhibition. The best dish of Pears was shown by Mr. WOOTON, Bayford, with Doyenné du Comice. Mr. WEBB, of Glewstone, won with Cox's Orange Pippin, the prize for the best dish of dessert Apples, staged in the Cottager Classes. The Rev. G. H. DEVONPORT had the best bunch of Grapes—a fine one of Muscat of Alexandria.

PEARS.—There were five collections in the class for 12 varieties, and of these the Rev. G. H. DEVONPORT, Foxley, scored chief honours, with splendid dishes of Beurré Diel, Pitmaston Duchess, Doyenné du Comice, Beurré Bosc, Easter Beurré, Marie Louise, Durondeau, Duchesse d'Angoulême, Emile d'Heyst, Beurré Rance, Le Lectier, and Nouvelle Fulvie; A. W. FOSTER, Esq., Brockhampton Court (gr. Mr. Parrot), was a good 2nd, and Mr. W. JONES, 3rd. The best of seven exhibitors, in a class of eight dishes of Pears, was shown by Sir J. COTTERELL, Garnons (gr. Mr. C. Liddle), who staged the following varieties in splendid condition: Doyenné du Comice, Durondeau, Pitmaston Duchess, Easter Beurré, Beurré Superfin, Nouvelle Fulvie, Marie Louise, and Josephine de Malines. 2nd, Mr. WHITING, Credenhill.

SPECIAL PRIZE CLASSES.

In the class for a collection of Apples (eight dishes of culinary, four dishes of dessert varieties), four fine lots were staged, the best being ex-

hibited by Mr. C. W. POWELL, Warham, who had Lord Derby, Annie Elizabeth, Newton Wonder, Bramley's Seedling, Stirling Castle, Charles Ross, and others. Mr. J. BOTT, Branton, was a close 2nd, and C. B. LEE WARNER, Esq., 3rd. There was only one exhibit of six varieties of recent introduction, and this from Mr. C. W. POWELL, who staged splendid fruits of Coronation, King Edward VII., Lord Hindley's Rival, James Grieve, and Charles Ross.

For 18 dishes, including 12 culinary and six dessert sorts, Mr. THOMAS led amongst five exhibitors; Mr. KELLY was placed 2nd, and Mr. A. PARRY, Palmer's Court, 3rd.

There were six entries in the class for eight dishes of culinary Apples, and Mr. THOMAS was again placed 1st; Mr. KELLY following closely.

Five exhibits were staged in a class for eight dishes of dessert Apples, the 1st prize being awarded to Mr. KELLY for beautiful fruits.

COLLECTIONS OF FRUIT (six dishes).—Four creditable collections were staged, Sir J. COTTERELL (gr. Mr. Liddle) being placed 1st, with good Muscat of Alexandria and Gros Maroc Grapes, Emerald Melon, fine Doyenné du Comice Pears, James Grieve Apples, and Cox's Golden Drop Plums; Col. HENRY (gr. Mr. Sykes) was placed 2nd; and Mr. W. E. HYDE, Norwood Hall, 3rd.

GRAPES.—These were well shown, more especially in the classes for black varieties. Mr. LIDDLE was 1st, and Mr. SYKES 2nd. In the class for Gros Colmar and in a class for any other variety Mr. LIDDLE took the lead with large, finely-finished bunches of Mrs. Pince; Mrs. WOODHOUSE being 2nd, with well-finished bunches of Black Alicante. Rev. G. H. DEVONPORT had the best bunches of Muscat of Alexandria, followed by Mr. SYKES.

VEGETABLES.—Special prizes were offered by the King's Acre Nursery Co., Messrs. Sutton & Sons, Reading, Messrs. Webb & Son, Stourbridge, and Mr. J. Wilson, Hereford, for collections of vegetables, for which splendid produce was staged. T. KING KING, Esq., A. S. BURNES, Esq., (gr. Mr. Holden), and Messrs. STANBURY and PRICE were the chief prize-winners.

CHRYSANTHEMUMS.—There were six classes for Chrysanthemums shown in vases, amongst which fine blooms of Mrs. F. S. Vallis, Reginald Vallis, Lady Talbot, Mrs. A. T. Miller, and Walter James were observed. The leading exhibitors were Mr. PARROTT, C. J. HOLFORD, Esq., and T. W. GRESWOLDE, Esq. Two graceful groups of miscellaneous plants were arranged, and both dinner-table plants, and those of Begonia Gloire de Lorraine, for which classes were provided, were staged in capital condition.

TRADE EXHIBITS.—These were of splendid quality, although not numerous. The KING'S ACRE NURSERY Co., staged a fine lot of pot fruit trees, with 60 dishes of Apples and Pears; they also showed floral designs. Messrs. YOUNG & Co., Hatherley, Cheltenham, arranged a splendid display of cut blooms of Carnations of choice varieties, and Mr. J. WILSON, Hereford, had an exhibit of wreaths, bouquets, and other floral designs, with a group of Lily of the Valley in pots, and dishes of fruit.

PARIS INTERNATIONAL SHOW.

NOVEMBER 4-7.—The International Show of Chrysanthemums, fruit, vegetables, and other products, organised by the National Horticultural Society of France on the Cours la Reine, Paris, was opened on the 4th inst. under the most favourable circumstances. The schedule contained 11 sections, divided into about 160 classes. There were contributions from about 300 exhibitors, and their products were accommodated in a temporary building of similar dimensions to the one employed for the Spring Show in May, which was duly recorded in these columns. Many new seedling Chrysanthemums were exhibited, and were judged by the Floral Committee on the day previous to the opening. Certificates were awarded rather freely from an English point of view, and were for novelties from such raisers as Mme. CALVAT, MM. BACQUÉ, DOLBOIS, the Marquis DE PINS, RAILLON, LIGER-LIGNEAU, NONIN, ROZAIN-BOUCHARLAT, CHANTRIER, MONTIGNY, CLÉMENT, TRAINSEL, VILMORIN, ANDRIEU ET CIE, and DE CAUT. A special prize of the value of 100 francs was offered for the most remarkable novelty in new seedlings, and was by a large majority awarded to Mme. CALVAT

for a fine Japanese flower of immense size of a soft shade of bright rosy-mauve called *Petite Hélène de Tiaret*.

On the morning of the opening day the International Jury assembled at 8 a.m., and by 10.30 their work was finished, at which hour M. Fallières, President of the French Republic, paid an official visit and opened the Show. He was conducted through the exhibition by MM. Viger, Chatenay, Truffaut, and other officers of the society, and during his stay conferred several decorations upon various gentlemen connected with French horticulture. During the President's visit, Mr. Harman Payne was presented to M. Fallières by M. Viger. As we have mentioned on a former occasion, the two large greenhouses that once occupied the site on the Cours-la-Reine have been demolished, and the temporary building lightly constructed and covered with canvas has been erected in their place. This is approached through an attractive entrance gate, after passing which the visitor finds himself in a long promenade consisting of three pathways intersected at intervals with cross paths to facilitate the circulation of the visitors. Immediately inside the entrance were several most attractive groups of ornamental shrubs in beds of various shapes. M. LECOLIER had one composed of many examples of *Ilex*, *Yucca*, *Taxus*, *Abies*, *Juniperus*, *Cotoneaster*, *Privets*, &c. Close by, on the opposite side, were some from M. BROCHET and MM. CROUX ET FILS. Proceeding up the central alley of the promenade, we noticed a multitude of trained fruit trees of every conceivable form and size that French ingenuity can devise, even to one in the form of a bicycle. The chief exhibitors in this category were MM. CROUX ET FILS, G. BOUCHER, KILFER, MOSER ET FILS, NOMBIOT BRUNFAU, and LECOINTE MARTIN. Further up and close to the main entrance of the Exhibition Hall were ornamental shrubs from MM. MOSER ET FILS with many berry bearing plants, and a similar lot from M. DIRUDDER. In the great Exhibition Hall the brilliant colour and wonderful artistic arrangement of the Show were apparent. The ground plan, designed as usual by M. Jules Vacherot, was a most effective piece of work. The most attractive feature, apart from the Chrysanthemums, were the fruit exhibits, which were staged in enormous numbers. The first lot to meet our view was that of M. OPOIX, of the Luxembourg Garden, which filled a large room. It was a grand exhibit, including very fine Pears and Apples. We passed through an archway and then we saw a magnificent array of Vines in pots from MM. SOLOMON ET FILS, of Thomery. The vines, mostly in fruit, formed overhanging festoons, and embellished the arch on both sides. In several glass cases they staged Grapes in many varieties. A magnificent display came from M. DUPONT-BARBIER. It consisted of a run of 55 feet in length of ornamental plate glass, carved cases draped with crimson velvet. These cases contained Apples, Pears, Grapes, Peaches, and other fruits. Another similar exhibit came from MM. CORDONNIER ET FILS, Grapes being tastefully set up in fine bunches and arranged in small, flat boxes. M. MERCIER also had Grapes, as did M. TISSIER. The well known firm of MM. CROUX ET FILS had a long table with numerous Apples and Pears, and there were collections from M. NOMBIOT-BRUNFAU.

The far end of the Hall was devoted almost wholly to fruit, including exhibits from MM. GERBOUT, COTARD, BRONDER, ABEL CHATROLLE, THE ECOLE HORTICOLE DE PLESSIS-PIQUET and DUCLOS. By far the grandest exhibit here was that sent by M. HENRI LEQUEUX, and consisted solely of Pears. Flat boxes in rows four deep ran along one side of the hall a length of 42 feet. The fruits were of the finest quality.

We must not omit the interesting display by M. PINQUET-GUINDON, consisting chiefly of Apples and Pears, nor that of M. LOUIS RIBET, who had a fine table of Apples and Pears presented in various kinds of receptacles, boxes containing the fruit standing on velvet-covered easels, huge circular pyramids and flat baskets. Grapes were shown by M. GHAULT MAQUET. Dr. BORIES, M. H. WHIR (a fine lot of big bunches), EUG. LUQUET, and others. Among other fruit exhibitors were MM. LEON DESCHAMPS, MONSIEUX, DUBOST, THE ECOLE D'HORTICULTURE ST. NICOLAS, TH. ROUX, and E. FLEURY.

Vegetables were shown in a long room close to the far end of the Exhibition Hall. M. COMPOINT had a large display of Asparagus plants in a glass

case, and also bundles of cut Asparagus. The ETABLISSEMENT "A LA PENSÉE" put up an immense collection of vegetables. MM. RIGAUT ET FILS showed Potatoes in variety; M. L. GAUTHIER had an exhibit of Strawberries in fruit in pots. MM. ANGEL ET FILS staged Onions, Potatoes and Carrots in a large display, and from the ECOLE D'HORTICULTURE ST. NICOLAS there was a good general display of Vegetables. Further down the room MM. VILMORIN, ANDRIEU ET CIE occupied two sides with a border filled with vegetables.

We must now return to the entrance to pass in review the contents of the side borders and the many artistically-shaped beds on the ground level devoted to the cut flowers and plants. At Paris none of these are staged on tables as in England, but are placed in beds edged with turf or on grass lawns, which greatly enhance the effect of the Show as a whole.

We first come to the artistic compositions sent by the famous florist, M. LACHAUME, of the Rue Royale. A dinner table stands in the middle of a recess decorated in his usual style. Around it were huge vases on tall pedestals, and curiously-shaped wicker art baskets containing examples of floral artistic arrangement nowhere to be beaten in the world. Another floral decorative artist was M. ED. DEBRIE. Opposite to his neighbour, M. LACHAUME. The former had a space in which there were some grand vases of White Lilac, Chrysanthemums, Rose Mme. Abel Chatenay, and Carnations displayed in many decorative ways. On his left, MM. TRUFFAUT had a group of Azalea Wm. Petrick and A. Abel Chatenay, Begonia Ensign and Gloire de Lorraine, the whole set in a framing of Palms, forming a most attractive group.

THE BANQUET.

Shortly after midday on the first day of the show a lunch was given to the members of the jury and the officials connected with the show at the Restaurant Ledoyen. There was a very large party of about 150. M. Viger, the President of the National Horticultural Society of France, occupied the chair. After complimenting the exhibitors and others on the successful result of their labours, M. Viger offered a warm welcome to the foreign visitors from England, Japan, Belgium and Germany. The proceedings were of the most brilliant character, and speeches were made by M. Maeda, a former Minister of Agriculture of Japan, by Sir Albert Rollit, M. Firmin Lambeau, Baron von Solemacher, M. Ch. de Bosschere, Mr. Harman Payne, and others. Sir Albert Rollit referred to the approaching International Exhibition in London in 1912, and urged upon his hearers the desirability of a large French participation in the Show. He concluded by presenting to M. Viger and to M. Max de la Rochetiere, President of the French Chrysanthemum Society a Silver gilt Medal of the English National Chrysanthemum Society in recognition of their long continued hospitality to English visitors.

THE CONGRESS.

On Saturday there were two sittings of the Congress, one at 9 a.m. and the other at 2 p.m., in the hall of the National Horticultural Society of France, Rue de Grenelle. M. Viger presided.

During the proceedings a portable edition of the *Repertoire des Couleurs* was discussed, and finally referred to a special committee. Mr. Harman Payne urged the need of a pocket edition, by which anyone interested could easily compare the colours of flowers at shows, floral meetings and elsewhere. The present edition, with 365 loose leaves, renders it almost impossible to be of service in the open air and at shows. M. Chantrier produced a model edition, which was considered a useful pocket edition in every way, and read a paper detailing its advantages. There were several speakers, amongst them M. René Oberthur, the publisher of the original edition, who stated that 750 copies had been sold by the English Royal Horticultural Society. M. Blot (of Vilmorin, Andrieux et Cie), M. Clément, M. Truffaut, and M. Cochet all spoke on the subject, and the president, dealing with the matter, added that, as a doctor, having to deal with railway employees, he could vouch for the fact how few people there were whose vision was perfect in colours. A paper was read by M. Couillard on the history of the Chrysanthemum, and another by M. Crepin on damping of blooms. There was also a practical demonstration on packing cut Chrysanthemums.

(To be continued.)

BIRMINGHAM CHRYSANTHEMUM, FRUIT AND VEGETABLE.

NOVEMBER 8, 9, 10.—The present was the fiftieth exhibition which this important society has held, and it must be particularly gratifying to the officers and committee to know that splendid as have been many previous gatherings, this one was equal to any that has gone before. Practically the whole of the available space in Bingley Hall was occupied by exhibits.

So far as the Chrysanthemum section was concerned, it was not an easy matter to decide whether the cut blooms shown in vases or the groups constituted the finer feature, but the former should, perhaps, merit the most praise. The Japanese blooms were superb in quality, whether regarded from the standpoint of size, form, colour or freshness. In the groups, too, the same general excellence was clearly observable, and there was, in addition, skilful and artistic arrangement. Table decorations were charming, as also were the groups of winter-flowering Carnations. Apples, Pears and Grapes were extensively and admirably exhibited, as also were vegetables of all kinds. Add to these facts that the show was most ably managed, and it will be seen that the whole gathering was a conspicuous success, and worthy such an epoch as the jubilee of the society.

SPECIMEN PLANTS.

Many years ago the specimen plants which were exhibited at Chrysanthemum shows required a considerable amount of space for their accommodation, and they attracted much attention; but the days of their glory have gone. On this occasion the several classes resolved themselves into friendly duels between two competitors, and the 1st and 2nd prizes were consistently divided. For six large-flowered varieties, distinct, Japanese excluded, E. MARTINEAU, Esq., Edgbaston (gr. Mr. O. Brasier), was placed 1st with handsome examples of Mr. Bunn, White Beverley, Mme. Ferlat and Clara Wells as his best specimens. J. A. KENRICK, Esq., Berrow Court, Edgbaston (gr. Mr. A. Cryer), was awarded the 2nd prize; he had good plants of Mrs. J. Bryce and Mrs. N. Molyneux. In the class for six plants of Japanese Chrysanthemums, distinct, the positions of these exhibitors were reversed. Mr. J. A. KENRICK had excellent examples of Charles Davis, Mrs. W. Knox, J. H. Silsbury, Mrs. J. Ritson, Vivian Morel, and Mrs. J. Hadaway. Mr. E. MARTINEAU's best specimens were Mrs. J. Ritson, Vivian Morel and Mrs. W. Knox. Mr. E. MARTINEAU was the winner of the 1st prize in the class for three Japanese and singles; while Mr. J. A. KENRICK was to the fore with one large flowering variety, exclusive of Japanese, and one Japanese. In each instance the plants were well grown and trained.

GROUPS.

There were only two contestants for the awards in the class for a group of Chrysanthemums arranged for effect in a space measuring 20 feet by 12 feet. Mr. J. A. KENRICK was placed 1st for a magnificent display. The plants were splendidly grown and effectively arranged. Sir G. H. KENRICK, Whetstone, Edgbaston (gr. Mr. J. V. Macdonald), to whom the 2nd prize was awarded, relied upon single and decorative varieties, but although the result was attractive, it lacked the striking effect presented by the other group.

In the class for a group 14 feet wide at the back and front and 10 feet deep, in which the Chrysanthemums had to be shown as grown, with foliage plants, exhibitors in the preceding class were excluded. The premier position was gained by H. C. PINSENT, Esq., Lordswood, Harborne (gr. Mr. G. Corbett), with a beautiful exhibit; Mr. H. GREEN, Gravelly Hill, Birmingham, was a creditable 2nd, but the arrangement was rather flat; T. W. PIGOTT, Esq., The Leons, Park Hill, Moseley, was 3rd, with a crowded group.

Mr. C. H. HERBERT, The Nurseries, Acock's Green, was a splendid 1st for a group of decorative varieties arranged in a space 15 feet by 10 feet. Mr. J. A. KENRICK, with practically all single varieties, was 2nd, with a group which was thin in places. In the class for a group of cut blooms of Tree Carnations, to be arranged on a table space 18 feet long and 5 feet deep, Mr. W. H. LANCSHIRE, The Vinery, Gurnsey, was a decided 1st with an exhibit that combined excellence of quality with artistic arrangement. The 2nd prize went to Mr. C. F. WATERS, Deanland Nurseries, Balcombe.

BLOOMS SHOWN IN VASES.

The o were a magnificent feature of the show, the competition being extremely keen in all the classes, and the average merit of the blooms exceptionally high. The chief class was for six vases containing one bloom each of three distinct varieties in a vase, and the stems of the blooms had to be at least 18 inches long. There were six exhibitors, of whom Lieut.-Col. BEECH, Brandon, Coventry (gr. Mr. E. J. Brooks), whose exhibit was superb in every respect, excelled. The varieties staged were Algernon Davis, Lady Crisp, F. S. Vallis, Master James, Marquise V. Venosta, Mme. P. Radaelli, Mrs. C. Penfold, Bessie G. Payne, Hon. Mrs. Lopes, Valerie Greenham, Wm. Mease, Reginald Vallis, Lady Talbot, John Peed, C. H. Broomhead, Purity, Mme. G. Rivol, and President Viger; 2nd, Mr. W. IGGLDEN, Lock's Hill Nurseries, Frome; 3rd, H. ANDREWS, Esq., Toddington, Winchcombe (gr. Mr. J. R. Tooley).

There were eight exhibitors of four vases of Japanese blooms, three blooms of each variety in a vase. Lieut. Col. BEECH was again 1st, with F. S. Vallis (probably as good a trio of blooms as has been exhibited this year), John Peed, Hon. Mrs. Lopes, and President Viger. J. H. WHEATLEY, Esq., Berkswell Hall, Coventry (gr. Mr. W. H. Westbury), was placed 2nd; he had Lady Talbot and F. S. Vallis in fine form; and the Rt. Hon. JOSEPH CHAMBERLAIN, Highbury, Birmingham (gr. Mr. J. Deacon), 3rd; Algernon Davis being his best variety. For one vase of any pink variety, Lieut. Col. BEECH was awarded the 1st prize, having Reginald Vallis; 2nd, Earl SPENCER, Althorp Park, Northampton (gr. Mr. S. Cole), with Mme. P. Radaelli; and Mr. H. ANDREWS 3rd, with Reginald Vallis. For one vase of any crimson variety, Mr. W. IGGLDEN won the 1st prize with Master David; F. E. MUNIZ, Esq., Umberslade, Hockley Heath (gr. Mr. H. S. Foster), was placed 2nd, with the same variety; and Mr. H. ANDREWS 3rd, with Master James. For one vase of any white variety, Lieut. Col. BEECH took the lead with Purity; Rt. Hon. J. CHAMBERLAIN was 2nd, with Mrs. A. T. Miller; and Mr. G. W. DRAKE, Cardiff, 3rd, with Purity. Mr. J. H. WHEATLEY excelled in the class for one vase of any yellow variety, Lieut. Col. BEECH being placed 2nd, both showing F. S. Vallis; Mr. H. ANDREWS was 3rd, with Hon. Mrs. Lopes.

The class for 12 Japanese blooms, distinct, to be shown singly in vases, with any kind of foliage, on a table 6 feet by 5 feet, brought no fewer than seven competitors, and the class thus became a most effective one. The prizes were awarded to the Rt. Hon. J. CHAMBERLAIN, F. E. MUNIZ, and H. ANDREWS, in the order in which their names are given. It must have been a remarkably close competition between the 1st and 2nd groups. Major EVERETT, Knowle Hall, Knowle (gr. Mr. W. Newton), was splendidly 1st for four vases of singles, distinct; Mr. H. WOOLMAN followed, and F. W. GRESWOLD WILLIAMS, Bradbury Court, Bromyard (gr. Mr. H. Tribo), was 3rd; there were six exhibitors in this class. Some of the successful competitors in the numerous smaller classes for cut Chrysanthemums included Messrs. H. T. KEEP, G. W. DRAKE, T. W. PIGOTT, E. MARTINEAU, J. SHUTER, C. JUDGE, G. BOLT, P. J. WORSLEY, J. ARCHDALE, W. J. WAKEFIELD, J. A. BALL and E. DARBY.

FRUIT.

This section was almost restricted to Apples, Pears and Grapes, but if it lacked anything in the matter of variety it by no means did so in quality. Not only was the competition keen so far as numbers were concerned, but the exhibits showed very high quality. In the class for a table of hardy fruits, Mrs. HEARNE, Hanbury, Droitwich (gr. Mr. G. R. Morris), was an excellent 1st prize winner, having splendid Apples and Pears. The 2nd prize exhibit was also especially meritorious, but the grower's name and address could not be found. Messrs. PEWTRESS BROS., Tillington, Hereford, were 3rd.

Mr. H. ANDREWS was awarded the 1st prize for six bunches of Grapes, Muscat of Alexandria and Black Alicante being very fine. The 2nd place was won by Mrs. F. NEED, York House, Malvern (gr. Mr. J. Jones), who showed Appley Towers, Muscat of Alexandria, and Black Alicante, all in good form. The Earl of HARRINGTON, Elvaston Hall, Derby (gr. Mr. J. H. Good-

acre), was 3rd, with Muscat of Alexandria and Black Alicante.

For three bunches of Black Grapes Mr. H. ANDREWS was placed 1st, and Mrs. F. NEED 2nd, both showing Black Alicante.

Mr. H. ANDREWS excelled in the class for three bunches of Muscat of Alexandria. The Earl of HARRINGTON and C. WINN, Esq., Selby Hill (gr. Mr. T. Sheppard), being placed 2nd and 3rd respectively.

For two bunches of White Grapes, exclusive of Muscat of Alexandria, Mrs. F. NEED was placed 1st, having the variety Lady Holt. The Earl of HARRINGTON and Mr. E. MARTINEAU followed, both showing Golden Queen.

For two bunches of Black Grapes to be grown within four miles of Stephenson Place, Mr. C. WINN was 1st, with Black Hamburg, and the Rt. Hon. J. CHAMBERLAIN 2nd, with Black Alicante. For two bunches of White Grapes, subject to the same stipulation as to radius, the Rt. Hon. J. CHAMBERLAIN was 1st, and C. WINN, Esq., 2nd, both showing good bunches of Muscat of Alexandria.

The premier prize in the class for six cooking Apples, distinct, was won by Lady HENRY SOMERSET, who had grand examples of Peasgood's Nonesuch, Warner's King, Lord Derby, Tyler's Kernel, Charles Ross, and Mère de Ménage; 2nd, Mr. C. W. POWELL, Woburn, his fruits of Stirling Castle, Anne Elizabeth and Lord Derby being especially fine; Mr. C. WYATT, Haverington, Evesham, was a good 3rd. In the class for six dessert Apples, Lady HENRY SOMERSET retained the lead, with fine fruits of Ribston Pippin, Blenheim Pippin, Cox's Orange Pippin, Royal King of the Pippins, and Wealthy; 2nd, Mr. C. W. POWELL whose exhibits included a handsome dish of Cox's Orange Pippin; 3rd, Mr. C. WYATT.

PEARS were excellent and numerous. For a collection of eight distinct varieties Lady HENRY SOMERSET was placed 1st. Mr. C. W. POWELL 2nd, and the Earl of HARRINGTON 3rd. The winning exhibit comprised Burre, Ducl, Drummond, Pomeston Duchess, Doyenne du Comice, Conseiller de la Cour, Constance, Souvenir du Congrès, and Marie Louise. Lady HENRY SOMERSET also had four varieties, distinct, with handsome dishes of Pomeston Duchess, Doyenne du Comice, Marie Louise, and Burre Superfin. Captain W. H. STARKY, Banate House, Leamington (gr. Mr. C. L. Blackburn), was a good 2nd, and Mr. C. W. POWELL 3rd.

VEGETABLES.

The prizes in the classes for vegetables were provided by various seed firms, and some produce of exceptionally high quality was shown. We can only find space to mention the collections, and it must be understood that most of the smaller classes were well filled. In Messrs. Sutton & Sons' class for nine kinds the Hon. VICARY GILES, Aldenham House, Elstree (gr. Mr. E. Beckett) won the 1st prize easily with an exhibit in this well-known grower's best style; Mrs. DAVIS, Ruabon, was 2nd; and Mr. G. NEAL, Bampton, Oxfordshire, 3rd. No fewer than nine competed for the prizes offered by Messrs. Robert Sydenham, Ltd., for a collection of nine kinds, the 1st prize being won by Mr. T. JONES, Ruabon; the 2nd by Mr. J. WHITE, Bampton; and the 3rd by Col. E. PALEY, Mickleton Manor, Gloucestershire (gr. Mr. C. Rowlands). In a similar class for local growers, Mr. E. DEAKIN, Hay Hall, Hay Mills, was placed 1st, Mr. J. A. KENRICK 2nd, and Mr. F. WHITEHEAD, Stockfield Road, Yardley Heath, 3rd. The prizes were offered by Messrs. R. Sydenham, Ltd. Eight competed in Messrs. Webb & Son's class for a collection, and Mr. J. HUDSON, Leicester, was a splendid 1st. The 2nd and 3rd prizes went respectively to Earl SPENCER and Mr. T. BARRETT.

NON-COMPETITIVE EXHIBITS.

The groups of plants, flowers, fruits and vegetables arranged "not for competition" added immensely to the interest and beauty of the exhibition.

Large Gold Medals were awarded to Messrs. WEBB & SON, Wordsley, for vegetables; THE KING'S ACRE NURSERIES, Hereford, for Apples; Messrs. JOHN WATERER & SONS, Bagshot, for shrubs; Messrs. GUNN & SONS, Olton, for floral

decorations and rockery; Messrs. YATES & SONS, Birmingham, for vegetables; and Messrs. SUTTON & SONS, for vegetables.

Gold medals were awarded to Messrs. CLIBRANS, Altrincham, for Chrysanthemums; Messrs. THOMSON & Co., Birmingham, for vegetables; Mr. H. WOOLMAN, Shirley, Birmingham, for Chrysanthemums; Messrs. TOOGOOD & SON, Southampton, for vegetables; Messrs. BAKERS, Wolverhampton, for shrubs; Mr. W. J. GODFREY, Exmouth, for Chrysanthemums; and to Mr. S. MORTIMER, Rowledge, Farnham, for winter-flowering Carnations.

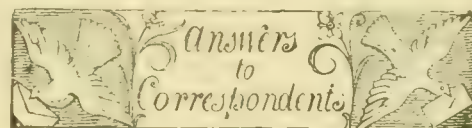
Silver-gilt Medals were awarded to Messrs. W. WELLS & Co., Mersham, Surrey, for Chrysanthemums; Messrs. HEWITT & Co., Birmingham, for shrubs; Mr. H. N. ELLISON, West Bromwich, for Ferns; Mr. C. W. POWELL, Warham, for hardy fruits; Messrs. YOUNG & Co., for winter-flowering Carnations; and THE GOVERNMENT OF BRITISH COLUMBIA, for Apples.

Silver Medals were awarded to Messrs. W. H. SIMPSON & SON, Birmingham, for vegetables; Messrs. PEWTRESS BROS., Tillington, Hereford, for Apples; and Miss THOMPSON, Handsworth, Birmingham, for Cacti.

A Bronze Medal was awarded to Councillor E. A. WILSON, for Cactaceous plants.

NATIONAL HARDY PLANT.

NOVEMBER 3.—The first general meeting of this society was held at the Hotel Windsor on the above date, Mr. A. J. Macself in the chair. The Chairman presented the report of the Provisional Committee appointed at Shrewsbury, which dealt with the Edinburgh meeting, and submitted draft rules and by laws which the secretary had prepared and which were recommended by the committee for adoption after several minor amendments had been accepted, the rules and by laws were adopted. The following officers were elected: Chairman of Council, Mr. A. J. Macself; vice-chairman, Mr. Went; treasurer, Mr. Brunton; secretary, Mr. F. Bouskell. A representative Council of 42 was then elected.



AERIAL ROOTS ON VINES: H. B. The presence of these indicates (1) too much moisture in the atmosphere, and (2) an unsatisfactory rooting medium. Your best plan will be to thoroughly overhaul the borders at this season and keep the atmosphere in the vinery drier during the spring forcing, affording more ventilation than you have permitted hitherto.

AERIALS ON WALLS: Notts. Your experience with these trees losing their branches is by no means an isolated one. Although neither science nor practice has yet been able to find a reason for this trouble, it is held by many to be a result of some injury to the roots, whilst others maintain that it is caused by the restriction of growth by pruning. It is found that a freer application of water at the roots than is usual will often mitigate the trouble.

BEGONIA: A. J. J. C. The brown markings on the Begonia leaves are not caused by any fungus or insect pest; it is due to some cultural condition.

CARNATIONS DISEASED: F. Godwin. The Carnations are very badly infested with the so-called "fairy ring" disease, caused by the fungus *Heterosporium echinulatum*. Remove all the leaves which are badly affected, and spray the plants once a week until quite healthy with liver of sulphur solution (see answer to *Anxious, W.*). Ventilate the house well, and avoid watering the foliage or allowing moisture to collect about the stems.

CHRYSANTHEMUMS AND BEGONIAS UNHEALTHY: F. T. B. The darkening of the leaves of the Chrysanthemum is not due to any fungus or insect pest. It would appear to be due to some physiological peculiarity of the variety. Plants, when crowded together and syringed frequently exhibit a darkening, and ultimately

rotting, of the lower leaves. The Begonias appear to have suffered from the Begonia mite. The house should be fumigated by evaporating nicotine.

CYCLAMEN LEAVES WITH BROWN MARKINGS: *Anconis*, W. The brown marks on the leaves are caused by the attacks of the fungus *Botrytis cinerea*. This fungus is very common on greenhouse plants, and under certain conditions becomes epidemic. It spreads from dead and drying parts of the plant to healthy foliage. Remove and bury all dead or dying vegetable matter (especially of Pelargonium, Primula, and Begonia), and spray the affected plants with liver of sulphur (1 oz. dissolved in three gallons of water). Remove the plants to another position if necessary for the spraying, as the spray discolours white paint. The grub is the common Weevil.

CYPRIPEDIUM AND BEGONIA LEAVES: *F. H. R.* The rusty appearance on the leaves is caused by thrips. As a rule, excessive heat, especially at night, is favourable to the increase of this pest. Cut off all the affected parts which can be spared, and repot the plants, after spraying them with a weak insecticide. Carefully attend to the regulation of the temperature of the house and the ventilation, leaving a little air on at night if the heating apparatus cannot be so arranged as to prevent excessive heat.

DAISIES ON A LAWN: *L. H. A.* If you apply some nitrogenous manure in the spring, it will cause the grasses to grow vigorously, and in time crowd out the Daisies. Sulphate of Ammonia would be suitable, and this should be mixed with some fine soil, and applied in the spring as a top-dressing, to ensure an even distribution.

FERNS WITH WHITISH FRONDS: *H. J.* Although we do not find any of the creatures on the fronds, there is evidence of attack by thrips. From the general appearance of the Ferns, they appear to have been kept in too dry surroundings. Search for the pest, and, if thrips are found, dip the foliage in a weak solution of tobacco water. Meanwhile, give the roots a little manure water, repeating the dose occasionally. Damp the floor and stage of the greenhouse whenever the weather conditions allow.

FRENCH GARDENING: *W. R. H.* We cannot vouch for the accuracy of statements which appear in the daily papers. It is, of course, quite possible to secure £240 worth of produce from an acre of ground by means of frames and lights. Indeed, a good deal more can be obtained by intensive methods practised by a man who knows his business, but there is a difference between gross returns and net profits. With proper heating arrangements and hotbeds, it would be possible to secure three crops of Dwarf Beans in the course of a year, if it were worth while to do so. It is, however, questionable if the three crops together would realise as much as one good crop of Canteloup Melons in an ordinary hot summer season. You evidently refer to the French system of intensive cultivation when you ask how long the hotbeds remain in good condition, the size of the beds, the crops and varieties to be grown, &c. To answer all these queries would take up a good deal of space. You will, however, find most of your queries answered in the *Calendar of Gardening Operations*, to be obtained from our publishing department for 6d. net, and a more detailed and elaborate account of the methods employed by French growers will be found in Mr. John Weathers' book on *French Market Gardening*, price 3s. 6d. If you wish to see a good French garden actually in working order you might visit the Burhill Golf Club, Walton-on-Thames, or write to the Manager, French Cloche Co., Caxton House, Westminster, for a list of places. There are good French gardens at Mayland, Althorne, Essex, at Evesham, at Tiptree, Essex, at Thatcham, Berkshire, and elsewhere.

HOUSE FOR MUSHROOM CULTURE: *W.* A Mushroom-house should be constructed with either a lean-to or span roof. Choose a situation that is fairly sheltered, as fluctuations in temperatures are injurious. A suitable place is a house leaning to a north wall at the back of a range of glasshouses, with a doorway that may be entered from these warm structures, thus preventing cold draughts. The roof may be

either made of thatch or of slates with an inner lining of match-boarding; it is essential to preserve an equable temperature. The front of the house may be either of brick or of wood with match-lining on the inside. A width of 10 feet is suitable, as this will allow for beds $3\frac{1}{2}$ feet wide on either side of a central path. Flow and return pipes from the hot-water cistern should run the whole length of the structure, and may be placed either along the centre of the path beneath a wooden trellis or by the side of the back wall.

MORAIINE: *Charles P.* If the moraine plant is already in fairly gritty soil, take away as much as can be done without causing the roots much disturbance, paying particular attention to cleaning all away from the collar of the plant. On the contrary, if the plant is growing in non-gritty soil, and, therefore, in soil quite unsuitable for it, by all means shake out the whole as carefully as possible, and plant it direct into the moraine. If such sticky soil is put into the moraine with the plant, it will, in course of time, choke the moraine itself, and certainly will take the chief advantage of the moraine away from the plant in question. If the operation of shaking-out be done with due care, much less harm will come to the plant from the shock than by allowing it to remain in the unsuitable soil, especially in the winter, when the correct moraine soil ensures rapid drainage, which is so essential to such plants.

NAMES OF FRUITS: *J. Cooks.* Barnack Beauty.—*J. Coombes.* 1, Wadhurst Pippin; 2, Golden Reinette; 3, Sweet Lading; 4, Fearn's Pippin; 5, not recognised.—*J. Hathaway.* Apple, a very fine fruit of Golden Noble. Pear General Todleben.—*H. B.* The large Apple is Blenheim Pippin, the other Belle de Boskoop.—*H. Collier.* Apple King of the Pippins. Pear Fondante d'Automne.—*Reader.* 1, Scarlet Golden Pippin; 2, Hoary Morning; 3, Brownlee's Russet; 4, Golden Knob; 5, Cellini; 6, Dumelow's Seedling.—*Lorraine.* Apples: 4, Bramley's Seedling; 5, Beauty of Kent. Pears: 1, Nouveau Poiteau; 2, Aston Town; 3, Pitmaston Duchess.—*T. S.* 1, Easter Beurré; 2, Beurré Diel; 3, Marie Louise; 4, Nelson's Codlin; 5, Lady Henniker; 6, the specimen is insufficient.

NAMES OF PLANTS: *J. C., Dumbarton.* Stapelia Hanburyana, see illustration in *Gardeners' Chronicle*, August 29, 1908, p. 167.—*F. R.* 1, Oncidium pretextum of the Pernambuco type called Gravesianum; 2, Brassia verrucosa; 3, Maxillaria phenicantha; 4, Mystacidium filicorne.—*V. H.* 1, Pteris longifolia; 2, Adiantum assimile; 3, Todea arborea.—*T. W., Hereford.* 1, Viburnum Opulus; 2, Euonymus europæus.—*W. A. H.* Aster, probably "Triumph".—*J. J. M.* Gunnera manicata.

PEARS FOR FLAVOUR: *H. Green.* The following is a good selection for flavour:—Marguerite Marillat, Triomphe de Vienne, Doyenné du Comice, Durondeau, Le Lectier, and Beurré Hardy. The cordons should be planted at 18 inches to 2 feet apart, and they should be worked on the Quince stock.

PRUNING COBNUITS AND FILBERTS: *L. H. Appleford.* The best time to prune Filberts is when the male catkins are about to disperse the pollen. A considerable number of these male catkins will be cut off in the process of pruning, and if the branches are placed amongst other Nut trees where there is a deficiency of male flowers, it will ensure the pollination of the female blossoms. You will find information on the pruning and general culture of Cobnuts and Filberts in an article in *Gardeners' Chronicle*, February 9, 1907, p. 81.

PTERIS: *Dundee.* There is not the slightest trace of any fungus or insect pest on either of the specimens sent, and the injury must be due to some cultural defect.

RICHARDIA AFRICANA LEAVES: *A. E. P.* There are no signs of any specific disease in the Arum Lily leaves: the injury must be connected with some wrong cultural detail.

ROSE TREES UNHEALTHY: *A. W., Windsor.* The roots of the Rose trees are infested with the spawn (mycelium) of some fungus, which has invaded the tissues of the root as well as covered the outside. The name of the fungus cannot be ascertained, as there is no fructification present. Such fungi as this frequently

spread from old roots in the ground, and those mentioned in this case should be grubbed up. Mix quicklime with the soil where the Rose trees have been growing.

SCARLET RUNNERS: *Continuous Reader.* It was a mistake to plant Scarlet Runners in August. The scarcity of pollen renders it almost impossible to get a satisfactory crop so late in the season. Try a good watering at the root, and give abundance of air night and day. If the atmosphere becomes dry the plants may be syringed. A good crop of Scarlet Runners is very seldom obtained under glass.

SETTING OF TOMATO FRUITS: *A. G. B.* If you adopt the usual practices you will ensure a good setting of the fruits without actually moving the bees into the glasshouse, although Tomatoes, not less than other species, set their flowers most readily when winged insects have free entry into the houses. It is necessary at the time the plants are in flower, and especially in the case of the first blooms, to maintain fairly dry conditions in the house, so that the pollen will disperse readily. Afford the plants the lightest possible position, and do not over-stimulate them with manures in their early stages. Each day at about noon either gives the stakes to which the plants are supported a sharp knock to disperse the pollen, or touch each flower with a small, soft-haired brush.

SOIL FOR EXAMINATION: *E. W. S.* The sample appears to be a suitable medium for most garden plants, but it lacks vegetable loam. It is rather light and gravelly in texture, therefore use well-decayed manure, but not cows' dung. It will be benefited by adding garden refuse, decayed leaves, or any substance that provides humus. The benefit of trenching the land will be more apparent in future years. Land that is dug deeply, and especially light soil, is too loose the first season to produce the best crops.

SWEET PEAS FOR EXHIBITION: *B. L.* In order successfully to exhibit six distinct varieties, you must have not fewer than nine sorts from which to choose on the day of the show. Excellent varieties are Sun-proof Crimson, Asta Ohn, Etta Dyke, Helen Lewis (selected stock), Clara Curtis, Mrs. Hugh Dickson, Countess Spencer (selected stock), Mrs. C. W. Breamore and Marie Corelli; you can ascertain the colours from any Sweet Pea catalogue. You should have five or six plants in each clump, and they should be put 15 inches asunder; two clumps of each will be ample if you grow the plants properly. The Secretary of the Royal Horticultural Society, Horticultural Hall, Vincent Square, London, S.W., will send you full particulars of the society's examinations upon receipt of a request for information accompanied by a stamped directed envelope.

VIOLA: *W. H. E.* The injury is known as fasciation, and is often due to over-feeding. Affected plants should not be used for propagation. The condition is not caused by a fungus or insect.

VIOLETS: *A. J. J. C.* The Violets sent with "blotches" on their leaves are affected with a species of Cladosporium. It is probable, however, that this fungus has attacked only those leaves already previously weakened by unfavourable weather, or wrong cultural conditions. Pick off and burn the diseased leaves, and spray the plants with liver of sulphur solution (see answer to *Anxious*, W.).

VIOLETS DISEASED: *C. A.* Your Violets are attacked by the fungus *Cercospora violæ*. The diseased portions of the leaves fall out, and infect the soil, and the only means of checking this complaint is to remove all the plants, pick off the diseased leaves, and replant in fresh soil.

Communications Received.—C. T. D.—E. M., Leicester.—W. P. R.—A. W.—H. E.—A. J. H.—J. M., Bickton.—T. J. A. H., Notts.—W. H. A.—R. A. W.—W. H. P. C.—F. W. M. P.—A. W.—J. W.—Isleworth.—A. B. W.—W. H. Y.—S. L.—E. M.—F. M.—J. D.—S. A.—R. P. B.—C. E.—F. W.—W. A.—A. P.—W. E.—Blyth.—J. G.—R. W. T.—G. M. T., Midlothian.—R. P.—H. A. B.—G. H. B.—C. R.—R. G. W.—Anxious.—J. O. B.—G. W.—J. B.—P. B.—G. H.—D. C.—S. C.—Wish-ch.—W. E.—G.—E. J. L., Cardiff.—H. W. G.—Baron A.—N. E. B.—E. P. W.—J. D. P.—G. P.—Stirling.—W. J. V.—W. W.—G. D. J.—L. E. C.—W. M.—W. B.—G. E. M.—S. C.—T. F. R.—A.—E. F. C.—Constant Reader.—G. B., Poole.—T. W., Hampstead.—W. A.—N.—F. J. C.—A. H.—W. E.—B.—T. F. U.—R. W., junr.



NEW ROSE "PROFESSOR C. S. SARGENT,"
FLOWERING IN THE ARNOLD ARBORETUM, MASSACHUSETTS, U.S.A.

THE Gardeners' Chronicle

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ALPINE VALLEYS.

THE BORÉON.

THE Boréon Valley runs up in a curve from St. Martin Vesubie (Lantosque), to the high, rocky ridge between the Argentera and the Piagu. It is deep and densely wooded on either side; the walk from the Hotel Boréon (with its wonderfully beautiful waterfall, like a sheet of smooth glass falling into another of broken glass) is long and tedious and dull, a slow, interminable ascent through forest, beautiful, indeed, with Ferns and Moss and leaves of Pulmonaria, marvellously spotted, but empty of excitement for the collector. Gradually, however, the collector comes on to more open ground, and slowly approaches the upper levels. On the right, towers the vast wall of mountain that separates us from the Col de Fenestra: the Pine trees seem minute fur on the hillside; I recognise the place where, many years since, on a dull October day, I climbed for my first sight of Saxifraga florulenta. In the highest rocks, now of both the ranges to right and left, the most ancient of Saxifrages has its haunt.

The formation of the Boréon Valley is granitic, and, therefore, even when one does at last emerge towards the Alpine barrens, there are no very rich marvels to be seen. Anthericum liliastrium is like snow over all the slopes and ledges; Senecio balbisianus occurs; Lilium bulbiferum is gorgeous in profusion. But the only Saxifrage is Aizoon,

and, to the collector, there is nothing notable. Having heard of the wealth of the Boréon Valley, I pined, but in vain, to come out on the mountain limestone. In vain I say, for this district is wholly granitic to the very summits of Argentera and of Piagu, whose gigantic finger of nude granite is almost overwhelming in its grandeur now as one advances.

A last steep climb among Pines and Rhododendrons, and the upper Alp is gained. A great cirque of cliffs, with a grassy little river threaded plain in the foreground, where Gentiana verna—true verna—is making patches of azure in mid-July, and G. acaulis showing diverse forms among the Alpine Clovers on drier hummocks. But still there is nothing to thrill. It is evident that one must climb far higher if one is to find the important things of which one has heard. One, indeed, I am certain by now, I shall not find; for M. Correyon can only by a slip of the pen have urged me to look out for Saxifraga linguata. It must be pedemontana that he meant, for never yet were the great Silver Saxifrages of the Maritime Alps discovered luxuriating anywhere but on the mountain limestone. However, there is consolation, for, go where one will at this elevation, it will not be possible to escape from a greater Saxifrage yet.

A last tough climb, then up a long, stony bank, where Gentiana acaulis is really beautiful (it is seldom is, in my experience) in different tones of rich blue, and one comes out on the highest level, immediately under the long screes and grim pinnacle of Piagu. Here, everywhere, is a tumbled wilderness of enormous stones, a little blue lake in the middle, and late snow-patches lying here and there. And on the first stone-slope the harvest begins. (How often have I found in the Alps that only five minutes climb divides the land of dullness from the land of plenty.) Thlaspi limosellifolium is in sheets of fragrant lilac blossom; Saxifraga pedemontana is duly discovered; there are Achilleas and Myosotis in tufts; above all, in this sunny corner, Viola nummulariifolia has already begun to be lavish of those unique little flowers. The charm of this astonishing plant is hard to define. Awaiting a more precise note, I will only say that it has a wandering stoloniferous habit akin to that of Campanula Allionii. It is purely a moraine-plant, and the only reason, I believe, why we have never yet succeeded with it is that collectors so far have only, in their prudent economy, sent us mutilated lateral stolons, which are as obstinate about dying as would be those of C. Allionii. The innumerable flowers are Violets, not Pansies, flattened in shape, pencilled exquisitely with purple on a ground of very soft, clear blue, more tender, but no less definite, than that of the Periwinkle—a wonderful, indefinable colour. I forget whether it has fragrance; I should not need to go back there to find out, for, of my cautiously-collected plants, not one has failed to take hold and thrive prodigiously in sand or moraine.

Up and up the stone-slope to the cliff from which it falls away. Here there is a great snow-patch to be crossed. And then, standing in the dank hollow between snow and rock, one looks up at the cliff's face to see Primula marginata in bunches of blue-lavender blossom and P. graveolens hanging out stately clusters of imperial violet. The snows

of this late season have thus retarded them. By their side is Anemone alpina sulfurea, and, most strange to me, Anemone narcissiflora, too, growing, like the Primulas, as a real crevice-plant. And then, higher yet, in stark and impracticable crannies, shine the lustrous, thorny rosettes of the great Saxifrage.

For all round this region, Saxifraga florulenta abounds; this is the centre of its distribution. And here it does not seem very greatly to trouble about aspect, although you will be certain not to find it in cliffs exposed to the most glaring sun. But on either side of every gully, on ledge or slope, those rich rosettes are to be seen clustering; up one such ghyll I climbed high, high, finding abundance of the plant wherever, in the moister, shadier side, there was any available place. Never does one weary of seeing it; no plant I know gives such an impression of opulence and sombre splendour. I saw many thousands of plants one day in those upper gullies, and I repeat, to engrave it on the cultivator's mind, that every flower-spike was being thrown up, not by an old, time-honoured rosette, but by a young one, wide in span, which luck had cast in so favourable a spot that it was able to grow on as quickly as the real nature of the plant desires, in face of the misleading name it bears, and its own inability to make headway against the unpropitious circumstances in which it too often puts itself. As one gets higher, the plant becomes less guarded in its stations; at last I found it growing between rocks out on the open moorland of the upper fells. It never, however, seems to sow itself far from its beloved gullies; the open slopes at this height of 8,000 feet or so, are jewelled all over their austere expanse with the golden cups of Tulipa celsiana, a strange, brilliant thing to find abounding up here among the mountain mists. A little higher than this and the Saxifrage diminishes and grows rare, as if its utmost limit were reached; descending, one finds it again abundant, and on the sunnier cliffs Androsace imbricata. And, to crown all, I found the Saxifrage at last growing large and handsome, even in moraine, on the stone-slopes themselves. *Reginald Farrer.*

NOTES FROM A "FRENCH" GARDEN.

YOUNG Lettuce plants of all the varieties under the cloches are progressing favourably, and ventilation is given to every bell glass. At this time of the year we prefer not to use the ordinary 11 inch peg to give air, but small blocks of wood 1 inch by 2 inch by 2 inch, employed for packing the cloches during the summer, as these latter do not occupy so much room and are not in the way when covering at night. The plants must be grown very hardy, and they will not require any covering for another fortnight or so. The grower is very reluctant to use dry mats at this time of the year, as the opportunities for drying them are remote. The Cos Lettuces are now pricked out a second time, 14 plants in each cloche. Before placing the bell-glass in position a top dressing of finely sifted, decayed manure is spread over the ground. The Cos Lettuce "White of Paris" is generally pricked out in a frame, putting 180 plants into each light; this variety is only employed for open-air culture at the end of March. When the sowing or the seedlings have not been successful, or when a succession is required, a few more seeds may be sown

now on a small hot-bed, to prick out early in December into another bed. The Lettuce "White Passion" can also be sown at this present time, to provide a succession to those sown six weeks ago. This late sowing is to be recommended especially in the North of England and in Scotland for the main batch, as the plants cannot be planted in the open until the middle of March in the most favourable conditions.

The Chicory "Witloof" sown last May has been lifted from the ground, and the roots placed in trenches 3 feet 6 inches wide, allowing a space of 3 inches or 4 inches between each row. The roots are covered 1 inch deep, with decayed manure or fine soil. If the soil is heavy clay, it is preferable to place the roots on the ground and cover them with soil. If frame lights are placed over the roots, they will serve to shelter them from rains. The forcing of Chicory roots starts at the earliest at the end of the present month. Part of the bed is covered with a layer 15 inches to 18 inches thick of good manure, and is covered with mats. The crown will require four weeks to grow to a marketable size, and when a succession is wanted another part of the bed is covered each week.

The preparation of the ground for next spring's work will be pushed forward as speedily as possible. The manure for the hot-beds is now being collected gradually, to provide the necessary quantity before January. It is preferable to stack the manure a few weeks before it is needed, in order that it may sweeten and develop any fungi before it is employed for the making of the hot-beds. The steady and mild temperature produced by the second fermentation has the greater value. *P. Aquatilis*.

NEW OR NOTEWORTHY PLANTS.

PÆONIA JAPONICA,* Miyabe et Takeda.

THIS Pæony has been known to Japanese botanists from the remotest time, but as *P. obovata* Maxim. v. also grows in mountainous districts throughout Japan, *P. japonica* has been confounded with it or believed to be a merely white-flowered variety, for the habit is very similar. *P. japonica* is, however, distinguished from Maximowicz's plant mainly by its flowers, which open less widely and have more concave petals and short stigmas, whilst the leaves are quite glabrous. Therefore, the plant is considered to be a proper species, and its name has been put back to *P. japonica*.

The plant has a stem 2 feet high, with obtuse scales at the base, usually bifoliate. The leaflets are ovate, paler and glabrous beneath, petiolulate. The flower is white, 5 to 6 cm. across, not widely expanded. There are usually three sepals, ovate, without leafy appendage, deeply concave, green and glabrous. There are five petals, obovate-cuneate or orbiculate-obovate, with undulated margins. The numerous stamens are about 1 cm. long. The three carpels are slender, glabrous and green, and the stigmas short and sessile.

The species is widely distributed in Japan as far north as the island of Yezo, but it has not been recorded from neighbouring countries, while *P. obovata* grows in several places of Northern Asia. In Japan it is known under the name of "Yama-shakuyaku," i.e., the wild Pæony, and the plants flower in April and May. *H. Takeda*.

PÆONIA JAPONICA (Makino), Miyabe et Takeda.
Syn. *Pæonia obovata* β *japonica* Makino in *Tokyo Bot. Mag.* xvi (1902), p. 59.
Pæonia Wittmanniana Finet et Gagn. *Contr. Fl. Asie Orient.* i, p. 222, pro parte, non Lindl.
Pæonia albiflora Miq. *Prod. Fl. Japon.* p. 197, pro parte, non L.
Pæonia et Sav. *Fl. Japon.* i, p. 11, pro parte, non Pall.
Statura *P. obovata* Maxim. valde similes, sed floribus non aëris, albis, petalis obovato-cuneatis, vel orbiculato-obovatis, apicem versus undulatis, valde concavis, sub anthesi conniventibus, staminibus brevioribus, stigmatibus brevissimis nec elongatis nec convolutis, et totis distinguitur. *H. Takeda*.

SMALL HOLDINGS.*

THE objects of increasing the number of small holdings are, firstly, national, and, secondly, the benefit of the individual. It has always been recognised that the owner has a greater interest in the welfare of his undertaking than the hiring. The agricultural labourer at the age of, say, 25, earns as much as at any time of his life, with but little chance of promotion, and if he rises to be a foreman it means usually only an additional wage of, say, 2s. a week; after reaching the age of about 60, in spite of long experience, his wages begin to decrease, and he has little to look forward to (unless he has saved money) beyond ending his days in the workhouse; whereas in factories, railways, and other employments there seems usually a greater chance of promotion for the capable and industrious man. One of the chief objects, therefore, of the provision of small holdings should be to give a chance to the "small man" who is thrifty, capable and industrious, to "become a little bigger," and to place him on the first rung of the ladder of possible success, to give him an

the cost expended upon it. What is true in the case of crops or animals produced on a large scale with a minimum of expense is, therefore, increasingly so with products in small quantity; hence it needs even greater care in choosing what crops to grow or stock to rear and feed on a small area than on a large one. It would seem, therefore, that crops and live stock responding most to the largest output of manual labour, skill and personal care are those likely to be most successful on a small holding. These include milk, cream, poultry, eggs, fruits, vegetables and special crops, in the production of which the assistance of wife and children is of value. Except under special circumstances, to be successful small holders must work shoulder to shoulder and co-operate.

Organisation and co-operation are of vital importance. Anyone acquainted with agriculture, especially with fruit-growing, knows that this involves many difficulties, especially to the naturally self-reliant Britisher, who is probably less easily shepherded than men of other nationalities. In this direction we have lessons to



GARDCHRON

FIG. 153.—PÆONIA JAPONICA.

1, Flower. 2, Unripe carpels with withered stamens and persistent sepals. 3, Flower some of petals removed to show stamens and carpels. 4, Stamens (× 4½). 5, Stamens with anthers maturing (× 6½).

object in saving, and by so doing lessen the emigration of the best farm hands into the towns, and to give an opportunity to the country-born man to return to country life.

During the latter half of the 19th century many and varied labour-saving inventions in agricultural machinery had the effect of adding field to field and farm to farm in order to secure greater economy in working. In the 20th century, however, one hears more of cultivating small areas well than of farming large tracts of land with insufficient capital.

The price received for produce is, however, the crux of farming, and since the most favoured parts of the world each supply the several products of the farm prices have been effected adversely. It is quite easy in England to spend so much on labour and manure, feeding stuffs, &c., in producing either crop or animal, that the crop or animal does not equal in value

learn from Ireland and Denmark. In order to buy cheaply, ready money must be available. A small holder must start with sufficient capital. English agriculture is not sufficiently remunerative to pay interest on borrowed capital; therefore, in order to save the small holder from possible ruin when in a tight corner, it is very desirable that Credit Banks should be established, copying the best points of those of Germany, the system of which is excellent, since the loan made to a man is based on his character and guaranteed by those who know him. If the small holder is to succeed in England, "not a stone must be left unturned," both by the small holder himself and those who have created him. Among the benefits co-operation may give are the following:—

1. The formation of associations for renting land.

2. In purchase, by making up jointly orders for manures, implements, seeds, feeding stuffs, &c.

* Lecture read by Cecil H. Hooper, at the Northern Fruit Congress at Hexham.

3. In sale of produce, the collection, grading and marketing, which constitute a more difficult problem than that of purchase; the finding of new markets, especially in times of glut.

4. Loans of implements, such as corn and manure drills, rollers, horse rake, mowing and reaping machines, cart, wagon, potato digger, spraying machines (for spraying potatoes and fruit trees), and also tools rarely required, at a small charge.

5. Improvement of live stock by good sires, such as bull, boar, male goat; sittings of eggs.

6. Joint erection of shed and apparatus near station for cooling milk before putting on rail; the establishment of a cheese and butter factory, possibly a bacon factory in a dairying district, a central packing shed for grading fruit and vegetables in a fruit-farming district, &c.

7. Insurance of workpeople on small holdings against accident, as also insurance of cows and horses, &c.

8. Check on reliability of salesmen and other buyers.

9. Credit banks.

10. Union to get the best possible treatment from the railways, at least as good as their terms to the foreigner.

11. Advice and education on agricultural subjects, for example, as to best manures to use for certain crops, in order to avoid buying extravagant, unsuitable or fraudulent manures, and the same with regard to foods for animals and poultry; also as to seeds and varieties most likely to be successful. There might be a model small holding in each county, upon the management of which all questions should be answered, especially as to expenses and returns; or a prize might be offered for the best managed small holding in the county, due regard being had to its receipts and expenditure. The association of small holders should keep in close touch with their local agricultural college and experimental station; visit it and ply the instructors with questions. I am sure all the agricultural colleges would take special interest in helping small holders, and provide short courses of instruction for them, the expenses of which might well be paid by the County Councils.

The Board of Agriculture provides in its leaflets, which are free, some of the best information available on nearly all subjects that a small holder deals with, and small holders should obtain copies of those dealing with the management of animals and poultry, and their diseases; with crops, their manuring, cultivation, insect pests and fungoid diseases; construction of cow-sheds, &c.

The small holder with garden, orchard, poultry, goat or cow and pigs should provide nearly all the necessary food for his family, and his frugal wife and daughters should be able to prepare it in an appetising manner.

Land and situation.—The soil for a small holding on which crops are to be grown needs to be good. If for market-gardening, plenty of stable manure must be available; if for soft fruit, the land should be within easy distance of a town or railway; so it is not by any means any land that would make a good basis for small holdings. These requirements do not apply so much to a pastoral holding; but with the latter it is desirable that it should be near farms where the man can get work when his own place does not require his labour.

Tenure.—(1) It is probable that everyone in principle would like to see the small holder a freeholder of the property he farms; this, however, involves a larger capital than if he rents, and the small holder usually will need all his available capital to work his holding, and, if purchased, the probability would be that the holding would be mortgaged; even in Canada many of the farms are mortgaged, and the mortgagee often has a heart of stone.

(2) On the other hand, it is advisable for the tenant to have a proper agreement with his landlord in order to assure himself of security of tenure.

(3) Under the County Council there would be fair rent, secure tenure, and compensation for improvements, but the rent must be paid promptly. The leniency and generosity of the private landowner cannot be expected from the Council.

(4) Experts consider Land Renting Associations

will be the best system, provided the County Council satisfies itself that they are financially sound, since such associations relieve the County Council of the sub-division of land and the selection of the tenants, all the members being responsible for the proper cultivation of the land and the punctual payment of rents, and these men having co-operated to obtain the land are more readily organised for purchasing their requirements and selling their produce jointly.

Railways.—I hope the northern railways are fairer to the farmers than those of Kent, which, whilst doing the Continental produce traffic extremely well, allow the fruit-growers on their lines to suffer very seriously from late delivery into market and rough handling of their fruit by the porters. The owners' risk consignment contract is a great injustice to growers, making the railways exempt as to delivering the fruit in the right quantity, proper condition or proper time, the joint railways now refusing all claims for compensation except, apparently, in a few cases where complaints are made by large senders. In the district in which I farmed, on account of this bitter experience large and small fruit-growers send their fruit mainly by van or motor 15 miles to the London markets rather than suffer this treatment, the small growers getting other growers or contractors to take their produce up. Anyone will agree that the principle of bulking produce is right, but it needs a good deal of management. In the Swanley district the growers, after much work, got the Post Office telephone established, but the railway, to our disappointment, would not connect with it. If the four-ton rate is admitted as reasonable, the rates for small quantities seem to me to be quite out of proportion to labour in bulking, handling, etc. However, bulking produce to reduce the cost of freight must certainly be done to the utmost by small holders, and in such things as Potatoes, green Gooseberries, Apples, &c., they should be able to take advantage of it. It will, therefore, be necessary, that small holders who propose to combine, should choose the same varieties of produce to grow.

I regret that I have not yet visited small holdings in the north of England. However, a few words about some of those in Kent may be of interest. Two years ago I had the pleasure of visiting and reporting on a considerable number. Most of these were between 10 and 20 acres in area with a good cottage and necessary buildings for the varying class of farming. The holdings seemed to group themselves into the four following classes, viz:—

1. Entirely grass, save a garden large enough for vegetables for family.

2. Market-garden, growing vegetables (and perhaps fruit) for a neighbouring town.

3. Fruit plantations or orchards, from which the fruit was sent by rail to a salesman in a London market.

4. Those which, situated near a common, have the right of pasturage.

It was a privilege to meet these hard working, self-reliant men, who told both of successes and difficulties in their work. Some of them, in addition to work on their holdings, did outside work, such as thatching, hop drying, shearing, pruning, cartage work, wood-cutting (buying an acre or two of underwood to cut during the winter), or fruit-buying. One was away during the winter time pruning in the Midland counties, another having grass land travelled in spring time with a stallion, which he kept and worked on his holding during the rest of the year.

It seemed to me that the man with a grass holding and garden just large enough to supply his family (say one-eighth acre) was freest from anxiety, since he worked regularly on a neighbouring farm, looking after his cow, sheep, pigs and poultry before and after work hours; his wife and family helped during the daytime, his grass was cut with a machine by a neighbour, his wife and family turning and tossing, raking and coking the hay, and, when ready to cart, the small holders took a day off, hiring a horse and cart, and, with the help of one or two men, got the hay carted and stacked, each doing the thatching in his spare time. During the winter such a man takes another day off, hires a horse and cart, and carts out the farmyard manure to the grass land from which he has previously taken the hay.

The vegetable-grower works almost entirely on

his own land, his wife and boy with van and pony selling the produce from house to house in the neighbouring town or seaside resort. With vegetables there is such a large difference in prices between wholesale and retail that a small holder would probably grow at a loss if he sent his produce by rail to a salesman.

I would like to quote two examples of small fruit-growers near Maidstone sending their produce by rail to a salesman in London. One had old fruit plantations (say, from 30 to 40 years planted), but unfortunately the varieties were old and inferior, though the cultivation was good. He showed me carefully-kept accounts of receipts and expenditure over several years: some years showed a profit, other years a loss, the total showing only a small average profit. This occupier was a foreman of large plantations near, so did not work in his own plantations, though his son worked there regularly.

The other example is that of a man who grubbed an acre of woodland, and afterwards paid £1 rent, planted the land with Apple and Nut trees, Currants, Raspberries, &c. He worked on a farm near, working his fruit land in his spare time, sometimes taking time off, sometimes employing other men. It was rather weedy when I saw it, but it looked as if it had been fairly well treated generally. The result of this man's plantation, he confessed, had been a pleasure to himself and his family; it had occupied his spare time, and perhaps kept him from the public-house, but had not helped him much financially. The difference between the small grower and the large grower is that the large grower is able to hoe, prune and dig at the right time by setting on a sufficient number of men, whilst the small grower has to wait till he has the opportunity, and is consequently usually behindhand, and does little or nothing to protect his fruit from insect and fungus attack.

I agree that these examples are not indicative of brilliant success, but if there were more combination between both small and large growers we should be better off. There are many good examples of small fruit holdings on Lord Mount Edgecumbe's estate on the banks of the river Tamar, which divides Devon from Cornwall. Here the slope of land enables the tenants to grow early Strawberries as well as other fruits. In Hampshire also there are many Strawberry growers with small holdings. In both cases the climate favours them. There are also excellent fruit holdings and excellent holders at Evesham and Pershore in Worcestershire.

I think that a good form of small fruit holding would be for a landlord to plant on suitable land, say, five acres of bush Apples, tend them for five years, then erect an inexpensive though well-built wooden cottage (with brick foundation, such as one sees in Canada), and let to a tenant who would cultivate and tend the holding well.

In the case of men in the neighbourhood of a common having free pasturage, this seems to be a great advantage and gives a man the opportunity of gradually increasing his holding.

It seems desirable that small holders should be near together, if co-operation is to help, and that they to some extent work on the same lines and agree to grow to some extent the same varieties, say, of Potatoes, Apples, &c.

Small holdings should undoubtedly be encouraged, but in order for the men to be successful the land needs to be carefully chosen, and some authority needs to guide them and encourage them to work unitedly for their common good. I conclude by quoting the opinion of Sir John Lawes and Sir Henry Gilbert: "Although to establish a large number of the population of the land in small holdings would not only be very costly, but would only to a limited extent, and under favourable conditions, be attended with success, it is nevertheless very desirable that the sale and purchase of land should be rendered as cheap and easy as possible. Further, it would doubtless be for the benefit of the country that the owner of landed property should be absolute owner, with power to sell, or lease, or will it to whomsoever he pleases, and that his successors should have the same power as himself. It would, in fact, be desirable to remove all restrictions to the transfer of land, and to its acquirement on equitable terms, so that there should be no artificial obstacles in the way of the small holder, who would then succeed if the conditions were suitable, but not otherwise."

NOTICES OF BOOKS.

PLANT LIFE IN SWITZERLAND.*

THE books on Alpines show no signs of a diminished birth rate, and books are rather apt to resemble populations in their conformation to the general rule of averages. There are a few—very few—really good books, a sprinkling of bad ones, and large intermediate classes that, like the Laodiceans, are neither good nor bad. It is, of course, inherently probable that any fresh arrival will be found to belong to the common crowd. We find this expectation verified in the volume before us. Mr. Arber has endeavoured, it is true, to break out into a fresh track, but he does not appear to us to have been very successful. Apparently, he did not set out with the idea of "giving any aid towards ascertaining the names of Alpine plants"; he says so in his preface. His aim is indeed somewhat nebulous, viz., to "draw attention to some points of botanical interest among the better known members of the Alpine flora of Switzerland."

On turning to the letterpress, however, one is continually meeting with passages which, to any body unfamiliar with the flowers, can have but little interest, e.g., in the pages devoted to Androsaces, or the Buttercups. There is some information about the mechanism of cross-pollination in many of the plants, but we can hardly imagine that anyone, not already familiar with the plants, could utilise it, while to those who do possess some botanical and floristic knowledge, the treatment will perhaps appear somewhat perfunctory. The excursions into parthenogenesis and such like matters are either not extensive enough or they are superfluous, and we are not impressed by the chapter dealing with the supposed origin and relationship of the flora as a whole.

In fact, we confess to a feeling of disappointment. There is either too much or too little, and opportunities of really interesting the reader are too often missed. Thus a comparison of the different kinds of fruit in the Geums, especially in relation to means of dispersal in their natural habitats, will readily occur to anyone familiar with the Alpine flora as an example of what is here meant.

Nevertheless, the book is by no means wholly without merit. It is even probable that some will find it interesting, and certainly the admirable photographs of the actual plants provide a distinctly attractive feature. But why have the publishers used such thick paper? A book of this kind is most serviceable when it can be taken out on a ramble, but *Plant Life* is too thick for the pocket, and the rucksack is meant for other things.

ALPINE FLOWERS FOR ROCK GARDENS.†

THIS is in some respects a curious book. In the earlier pages an odd prominence is given to *De Vries* as a supposed authority on what one might call the botanical aspect of Alpines. There are extended references to other authors which, as we think, serve to swell unnecessarily the size of a rather unduly bulky volume. Moreover, Mr. Wright seems sometimes hardly to be speaking from first-hand experience, e.g., in perpetuating the fable about the Edelweiss. It is true he does not write about the inaccessible crags so dear to the heart of the stay-at-home journalist, but one would hardly gather that the plant is perhaps most frequently to be gathered among the grass of the higher levels. The reference to the rich flora of the Glyders of Carnarvonshire (p. 61) is rather misleading. The "stone-strewn surface" is not the rich side—indeed it is very poor—and the interesting flora is practically confined to a few calcareous rocks which for the most part project northwards from the Glyders themselves.

Sensible remarks are made on the construction

of rockeries and on the choice of stones, but many readers might criticise the chapter on the score of its brevity.

There are considerable lists of plants suitable for the rock garden but if we felt inclined to find fault with the author it would be on account of the omission of many "good" plants, and the inclusion of much "rubbish." Indeed, the whole book might be greatly improved.

A very attractive feature of Mr. Wright's book lies in the illustrations, which consist partly of reproductions of excellent photographs of rock-gardens, natural and artificial, and partly (or rather mainly) of coloured pictures which are unusually successful. Indeed the book is well worth having for the sake of the latter alone. The colours are vivid and reproduce, especially by artificial light, the character of Alpines better than most attempts we have seen. They naturally vary in quality, and sometimes the tint is hardly correct, e.g., that of *Primula farinosa* on p. 100, but this will not surprise anyone who is familiar with the difficulties that stand in the way of adequately reproducing the colours of

finest specimen of this beautiful Noisette I have ever seen was grown under glass by my friend Mr. David A. McClew, Factor on the Logan Estates, at Chapel Rossan, in this parish. It seldom had fewer, during the flowering season, than several hundred contemporaneous blooms. Miss Alice de Rothschild, which has just been distributed by Messrs. A. Dickson & Sons, appears to be a Rose of great beauty, and is manifestly regarded by them as a hardy Marechal Niel, with the colour and delicate aroma of that variety. If so, it can hardly fail to prove itself an important acquisition. *Le Progrès* is one of the finest yellow Roses I have had in my garden for many years. Its complexion is a very rich shade of nankeen yellow, sometimes suffused with apricot. It is one of the finest of the many fine Roses, for which we are indebted to M. Pernet Ducher. Another admirable yellow variety is *Medea*, raised many years ago by Messrs. Wm. Paul & Sons. When cultivated under favourable conditions of soil and atmosphere, this is truly a magnificent Rose. Here it flowers very late in the autumn, and at the present period—the beginning of November—it is



FIG. 154.—*KALMIA LATIFOLIA* IN THE ARNOLD ARBORETUM.

(See p. 330.)

flowers, as judged by the eye. The publishers are to be congratulated on the excellence with which they have carried out their part of a work which deserves to meet with kindly recognition at the hands of the public. J. B. F.

THE ROSARY.

YELLOW ROSES.

THE number of notable Roses of this special colour entirely suitable for garden cultivation is somewhat confined. It is especially to be regretted that the grandest variety of them all, the incomparable Marechal Niel, is only adapted, by reason of its sensitiveness to atmospheric influences, for conservatory culture. I have several times given it a fair trial in my garden on a sheltered south wall (perhaps not sufficiently warm for its requirements) with indifferent success. The

still in bloom. Mme. Ravary (Pernet Ducher, 1900) is a handsome orange-yellow variety of medium size, whose colour is occasionally highly distinctive. Harry Kirk, a very notable New-towards' introduction, is sulphur-yellow in colour, of almost perfect form, and very effective. I was very much impressed with the beauty of this lovely Irish Rose when I saw it quite recently—towards the end of October—in the new nurseries of Messrs. Dobbie & Co., near Edinburgh. It gave me a new conception of the value of this variety for decorative purposes.

Cloth of Gold now exists for the most part in conservative catalogues; I fear it is seldom cultivated even in the conservatory. Of infinitely greater value to the ordinary cultivator are Gloire de Dijon, and its more refined derivatives. Mme. Berard (supposed to be a hybrid between Gloire de Dijon and General Jacqueminot), Reve d'Or, and Bouquet d'Or. David R. Williamson.

* By Ed. Newell Arber. (London: John Murray.) 1910. Price 7s. 6d. net.

† *Alpine Flowers and Rock Gardens*, illustrated in colour and described by Walter P. Wright. (London: Hedges Bros.) Price 12s. 6d. net.

THE ARNOLD ARBORETUM.*

(Concluded from page 351.)

SUCH conifers and flowering evergreens as are hardy thrive exceedingly well. One of the great annual displays of the Arnold Arboretum is made by *Kalmia latifolia*. When I landed in Boston, on June 16, this shrub was in its full beauty both here and in the grounds of Professor Sargent's residence at Holm Lea. In the Arnold Arboretum it covers a sloping bank at the northern base of Hemlock Hill, forming an irregularly-disposed mass, perhaps 200 yards in length and 10 to 20 yards wide. There is considerable variety in the size and depth of shade of the blossom, and in the density of the flowers in the truss. With the dark masses of Hemlock in the background, the whole made a

separated from the next by a grass walk. The shrubs are brought together in their respective genera and Natural Orders, and there is only a single row of plants down the centre of the border. This allows each plant to stand on its own ground, without interference from its neighbour, and the convenience of the student is further aided by each specimen having a label on either side. The general idea is somewhat similar to that of the arrangement of the herbaceous plants at Kew. Considered as part of the landscape, this system is not beautiful, especially in the early stages, when the plants are not fully grown, and bare spaces yet await their destined occupants. But for purposes of botanical study, no other arrangement is so convenient.

The collections of trees are, of course, spread over the Arboretum generally, the rather

labour, but, during the course of it, he and his co-workers have been able to introduce to cultivation many new, very distinct, and beautiful species. A number of dwarf, bushy species are of particular interest to planters, because their low, almost shrubby habit makes them suitable for places where the older Thorns, from considerations of space, could not previously be grown. About 15 acres on the eastern slope of Peter's Hill have been devoted to the type collection of American Thorns. The plants have been raised from the type trees of each species, and every plant has its place defined on a plan of the site, so that, in case of loss of label, its identity would be recoverable. From 10 to 20 years must elapse before this collection reaches its best, but it will eventually constitute probably the most remarkable assemblage of members of a single genus in the world.

It was too late in the season to see the flowering of the rich and well-grown collection of garden varieties of Lilac (see fig. 155), but *Syringa japonica*, the noblest of the genus, and a tree here over 30 feet high, was very striking in the profusion of its large, pyramidal panicles of white blossom. Even with us it is a very useful small tree, because of its late flowering, but it is one of the instances already alluded to where North Asiatic deciduous trees thrive much better in places where the summers are hotter than ours.

One of the great annual displays of blossom in the Arboretum is made by *Rhododendron Kampeferi* (see fig. 156), a Japanese ally of *R. indicum*, but very hardy, introduced by Professor Sargent less than 20 years ago. This and most of the other Azaleas were past before my visit, but I was fortunate to find *A. arborescens*—an Azalea native of the Eastern United States—fully in flower. Its flowers are white, with long red stamens, and its charm is heightened by a most gracious perfume. It is curious that it is scarcely known in British gardens.

WHAT THE ARBORETUM HAS DONE

From what has been said it will have been gathered that the Arnold Arboretum is filling a very important part in the advancement of arboriculture in North America and Europe. Being in one respect part of the park system of Boston, it provides a very beautiful place of resort for the people of that city. It provides also many lessons in landscape art, for there is evidence that every aspect of the grounds has been the subject of careful study in that respect. While the scientific side of the establishment necessarily dominates all others, the natural beauties of the site have not only been preserved but greatly enhanced.

Considered from the practical side, as apart from pure botany, perhaps the most notable work it has done has been the popularisation and dissemination of American trees and shrubs. Before its foundation, American gardens appear to have mainly depended for their ornamentation on plants of European origin. As an instance, I was told that, 30 to 40 years ago, one could not have purchased 100 American Oaks in American nurseries. The flora of the East United States has given an extraordinary number of beautiful trees and shrubs to English gardens, and in the latter half of the 18th century and the beginning of the 19th, their introduction and cultivation was the chief interest of the most ardent horticulturists of the period. Many of the shrubs then introduced disappeared in course of time, and the Arnold Arboretum has done much good work in re-introducing them. Such shrubs as *Vaccinium hirsutum*, *Rhododendron arborescens*, *Gaylussacia brachycera*, *Kalmia cuneata*, and *Fothergilla major*, are a sample of the many delightful plants which have in this way been restored to us. Many quite new species have also been introduced to cultivation, whilst others,

FIG. 155.—GARDEN VARIETIES OF LILAC (*SYRINGA VULGARIS*) IN ARNOLD ARBORETUM.

picture of exceeding beauty (see fig. 154). No European visitor in the neighbourhood of Boston in mid-June should miss the sight of this splendid bank of *Kalmia*. Its beauty, both in Professor Sargent's garden and in the Arnold Arboretum, would seem to show that this shrub, although long introduced and well known, has either been neglected in Britain, or that our climate generally is not so well adapted for it as it is for most evergreens. It would appear, however, that the former is the case, as there are some very fine specimens in the South of England.

The botanical collection of shrubby plants is arranged in a series of long parallel borders, each border being about 8 or 10 feet wide, and

Natural Orders in the Bentham and Hooker sense being planted at the eastern portion of the grounds near the Museum. A special consideration is paid to American trees that reach timber-producing size. With these, the system is to plant (first) a number of specimens in a group close enough to develop trunks instead of side branches, and thus show their timber value; and (second, a single specimen at a distance of not less than 100 feet from its companion group. This is to show its value as an isolated tree for gardens and parks.

AMERICAN THORNS.

One of Professor Sargent's great tasks for some years past has been the elucidation of the North American *Crataegi*. It has involved an enormous

* Mr. W. J. Bean, in the *Kew Bulletin*, No. 8, 1910.

long known but rare, have been made more plentiful.

Next to the woody vegetation of his own country, Professor Sargent has given most attention to that of Northern Asia. He himself has enriched American and European gardens with numerous trees and shrubs collected in Japan in the early 'nineties. It would need too much space to enumerate half the things introduced through him and the institution he controls; but amongst them the following are especially noteworthy:—*Syringa japonica* and *S. pekinensis*, *Cercidiphyllum japonicum*, *Phellodendron sachalinense*, *Rhus trichocarpa*, the typical *Prunus triloba*, *P. Sargentii*, and *P. subhirtella*, the Oaks mentioned above, *Picea Glehnii*, *Betula Maximowiczii*, and *Rhododendron Kämpferi*.

the numerous qualities that are needed to make the perfect director of a large public garden, there are three that stand out as peculiarly essential. As a matter of course, he should have great scientific attainments, and in these days he needs also a keen perception of landscape beauty; finally, he must possess the business faculty. To few have these attributes been given in so full a degree as to Professor Sargent. No one has done a tithe as much for the advancement of knowledge in regard to North American trees and shrubs, and, although now in advanced middle age, he still retains an untiring mental and physical energy. A great traveller, he has seen all but a few of the North American trees growing in their natural haunts. He has also introduced many valuable North Asiatic trees to

whose ten volumes are a mine of reliable information, especially in regard to trees and shrubs. In 1894 was published the *Forest Flora of Japan*, the outcome of Professor Sargent's travels in Japan a year or two previously.

His greatest work, however, and the one on which his literary fame will most endure, is the *Silva of North America*, a magnificent work in quarto of 14 volumes, giving one or more portraits, a description, and much historical and other information about every tree of timber-producing size in North America, exclusive of Mexico. A very successful work is the *Manual of the Trees of North America*, to some extent an abridgment of the *Silva*.

At the present time there is being issued at intervals a quarto publication called *Trees and*



FIG. 156.—RHODODENDRON (AZALEA) KÄMPFERI IN THE ARNOLD ARBORETUM.

On behalf of the institution in its relationship to Harvard University, two collectors, Messrs. Wilson and Purdom, are now travelling in China, and the former had previously spent two or three years there in the same work.

Whilst my object has been to indicate as briefly as possible what the Arnold Arboretum is and what it does, and to show that it is an institution which Harvard University and the City of Boston in particular, and the United States in general, have every reason to cherish and be proud of, I should not conclude without a few words in appreciation of the remarkable man who has made it, to whom it owes its splendid efficiency, and on whom its continued existence as a scientific institution has largely depended. Among

America and thence to Europe. Free from the common craze of the collector for exclusive possession, his desire is that the plants he introduces should become widely diffused in gardens, and the limits of his generosity appear to be set only by the possession of a single plant of a kind.

The literary work of Professor Sargent commenced with the publication of the ninth volume of the *Tenth Census of the United States*, which contained a catalogue of the forest trees of North America, amplified by various particulars in regard to habitat, uses, sizes, &c. From 1888 to 1897 he published a weekly journal devoted to forestry and horticulture—*Garden and Forest*—which was probably too much in advance of its period in America to be a financial success, but

Shrubs, giving illustrations and descriptions of new or little known ligneous plants. Since the publication of the *Silva*, however, the most laborious undertaking under the auspices of Professor Sargent and the Arnold Arboretum is a complete *Bibliography of the Trees and Shrubs of the World up to 1900*, which is now in the hands of the printer. This work will consist of four quarto volumes, and will run to 4,000 pages. It gives all references to the published literature of any value, in all languages, dealing with the woody plants of the globe. By its means the student will be furnished with a complete guide to all the authoritative printed information about any known tree or shrub up to the beginning of the present century.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

WISLEY TRIALS.—A special Sub-committee of the Fruit Committee of the Royal Horticultural Society visited Wisley on October 13 and recommended Awards of Merit to the following, which were confirmed by the Council at its meeting on Tuesday, October 25:—Apple Hounslow Wonder, from Messrs. Spooner & Sons, Hounslow; Peach Salway, from the Duke of Richmond, Goodwood. H. W. Wicks, Secretary.

R.H.S. FRUIT SHOW (see p. 353).—*F.R.H.S.* has good grounds for his remarks. I am certain that the county classes would be entered more largely if gardeners were certain that the rules would be strictly adhered to. The judges are not to blame, but the Council should instruct them to decide whether the fruits have been grown in the open or under fruit cases, or in orchard houses. It states clearly in the schedule "the fruit must be grown entirely outside." Such judges as are appointed should know that varieties of Pears like Marie Benoist, Beurré Diel, Emile d'Heyst, and Charles Ernest cannot be had entirely from the open by the middle of October to such perfection, except in Southern counties. In such a season as the past, it certainly cannot be achieved in Midland and Northern counties. I noticed in one or two instances in the single dish classes for Pears that the 1st prize was awarded for ripeness more so than for quality. This does not give exhibitors from the more Northern counties a fair chance. If the Society wishes to obtain greater competition from the Northern and Midland counties, they must make examples of those competitors who show fruits from indoors when the schedule requires fruits grown in the open. W. T.

EQUAL PRIZES.—I have read with interest the remarks of the several correspondents on this subject. I have judged at many shows, and on more than one occasion I have agreed with my colleagues to award equal 1st prizes. Where two exhibits are so close in point of merit that there is only one point (or half a point as some put it) between them, the fairest way is to add together the value of the 1st and 2nd prizes and divide the amount equally between the two exhibitors. It should be stated on the two prize cards that the exhibits have been considered of equal merit, and that the 1st and 2nd prizes are given them. A. J. L., Wyfold Court Gardens.

W. S. Gilbert, in one of his humorous plays, speaks of making "the punishment fit the crime." Why not make the reward fit the exhibit? How can there be any degree of fitness in giving a pointed collection of 127½ points 12, and one of 127 points 8? There is no sense of justice in such an arrangement. Were all sums of money offered in classes pooled, that is to say, if £20 were the allotted sum for three or four prizes in a class, and the awards of sums as prizes made in proportion to the numbers of points given to each exhibit in the class, full justice would be done. If two exhibits were found to be equal in number of points each would receive the same sum. It is often said that the high value of the first prize creates competition, but on the contrary, the too common relative smallness of the other prizes restricts competition. Did exhibitors understand that in all cases of pointed collections their exhibits would obtain prizes in exact accordance with the merits of each exhibit, they would be much more likely to compete. Of course, the number of prizes awarded in each class would be stated, as is now the case. A. D.

SAXIFRAGA FLORULENTA.—I am glad to see that Mr. Milne-Redhead, in your issue of November 5, comments (p. 340) on Mr. Farrer's remarks re *S. florulenta* in the previous issue. It is seven years since the last Kew *Handlist* was published,

and they will doubtless shortly issue another edition. With regard to Mr. Farrer's remarks respecting *S. lingulata* and *S. lantoscana*, the Kew authorities evidently consider *lantoscana* only a variety of *S. lingulata*, and it is a question as to whom we are all to go for an authority on these matters. We may all have private opinions on these vexed questions of nomenclature, but if everyone asserts his own particular opinion as the infallible one, where shall we all be? Even Kew must occasionally (and would be ready to admit it) be ready to alter their opinion, but it seems to me that Kew should be the final authority on these things; otherwise the confusion will be intolerable. We ought surely all to abide by their decision. So far as private opinion goes in this particular case, Mons. Correvon agrees with Kew as opposed to Mr. Farrer in that *S. lantoscana* is only a local variety of *S. lingulata*, and found, as Mr. Farrer says, only in the valley of Lantosque. It is worth noting, however, that the plants which Mons. Correvon and Mr. Sunderman send out under the name *lantoscana* are totally different; that of Mons. Correvon answering the description of the plant Mr. Farrer mentions as having a lot of Aizoon blood in it, and, with all difference to Mons. Correvon's opinion, it always seems to me that his plant must be a natural hybrid of Aizoon and *lingulata*, or, more likely still, Aizoon and *cochlearis*. The plant that is called *lantoscana* at Kew and Glasnevin is the same as supplied by Mr. Sunderman, and has been grown there under that name for many years. To my knowledge, the true *S. lingulata* has been grown at Kew, and also at St. John's College Gardens, Oxford, for over ten years, but doubtless inferior forms are supplied for it by nurserymen. The true form is so very distinct, as so well described by Mr. Farrer (see *Gardeners' Chronicle*, October 29, p. 311). Now, as to the question of *lantoscana* being only a variety of *lingulata*, the distinctive feature of both is that they flower on one side of the stem only, and this peculiarity is not found, so far as I know, in any other species, and this would rather point to the fact that they are one and the same species. In this connection it is worth noting that Mons. Correvon's *lantoscana* lacks this peculiarity, and this fact, together with the appearance of the rosette, make my theory of its connection with Aizoon as at least a reasonable one. There is a form of *lantoscana* called "superba" (that they have at Kew, and used to have at Glasnevin, but have lost), and it only differs by being still more gloriously beautiful in having rather larger flowers more densely smothering the drooping stems. If any reader wishes to know where these are obtainable, I shall be glad to give the information required. C. B. Robinson.

IVY-LEAVED PELARGONIUMS AS STANDARDS.—Ivy-leaved Pelargoniums grown as standards are by no means so uncommon as the note from your correspondent, *Yorkshire Gardener* (p. 297), would seem to suggest. During the season just ended a sunken garden in Battersea Park which was planted with bedding varieties of *Violas* had the monotony relieved by standard plants of Ivy-leaved Pelargoniums, several varieties being represented. The effect produced was decidedly good, as the plants flowered with great freedom. Again, during a visit paid to Messrs. Veitch's nursery at Feltham in the summer, I noted a considerable number grown in this way, and was told there was now a large demand for standard plants of such things as Pelargoniums, both Ivy-leaved and zonal, Fuchsias, Heliotropes, *Plumbago capensis*, *Salvia splendens*, &c. A selection of these was shown by Messrs. Veitch at the meeting of the Royal Horticultural Society on August 16. In growing Ivy-leaved Pelargoniums as standards, it is by no means necessary to graft them, as the more vigorous kinds form a stem as quickly as the zonal varieties, provided the side branches are removed until the desired height is obtained. For this purpose some of the best are Colonel Baden Powell, Murillo, The King, The Queen, Souvenir de Charles Turner, Mrs. Hawley, Corden's Glory, Resplendent, and Sabrina. One point to bear particularly in mind is that the leaves from their succulent character are much heavier than those of the zonal section, hence the support must be substantial. That suggested by your correspondent is very trustworthy, for though the question of expense may be a consideration, yet one has the advantage of feeling that the plants are safe even should storms arise. W.

SENECIO GLASTIFOLIUS.—I have made some experiments as to the hardiness of the variety of *Senecio glastifolius*, which formed the subject of the supplementary illustration in the *Gardeners' Chronicle* for July 16, and it occurred to me that you might like to know the results. Specimens planted in the open border without protection of any kind grew vigorously, and under less severe conditions would probably have flowered about January. Intense cold without frost produced no ill effects, neither was damage apparent after 10° of frost, but when the thermometer fell to 15° the plants perished. Here I think is evidence that the plants will be able to survive the winter in the open in the milder parts of the country, especially if a little protection is given them. It will then prove a valuable acquisition as a border plant, especially as the flowers are very useful as cut blooms, lasting well in water and being of an uncommon colour. Harry Rahjohn, Willock Abbey, Worsop.

A MONŒCIOUS DATE PALM.—*Phoenix dactylifera* is, I believe, generally known as a dioecious plant, requiring the presence of specimens of both sexes to ensure the production of its valuable and luscious fruit, which forms the chief food of the Bedouin Arabs. An exception to this has, however, occurred this year in the gardens of his Highness the Khedive of Egypt, at Cairo. A fine Palm, measuring 12 metres, or over 39 feet in height, has, to the great astonishment of the French gardener, Mons. Charles Henry, produced large bunches of flowers of both sexes, of which he sent specimens to the Editor of the *Revue Horticole*, who describes them at considerable length in the number of his periodical for November 1, on pp. 492-3-4, and also gives an excellent photograph of one of the bunches in illustration of his remarks. I think this curious occurrence is well worthy of commemoration, and should be specially interesting to botanists. W. E. Gumbleton.

LATE PEAS. It may be interesting to state that from a sowing of Sutton's Invincible Marrowfat Pea, made on June 26, I was able to pick several dishes of fine Peas during the months of October, and the last on November 2, which, I think, is rather unusual in this part of the country. No traces of mildew were to be found on the haulm, which speaks well for it being a useful late variety, as well as a good one for main crop. Vegetable Marrows and Runner Beans were untouched by frost till the night of November 2. A. Hough, Diddale Hall Gardens, Mansfield, Notts.

POISONOUS PROPERTIES OF THUYA.—I should be obliged if any of your readers can inform me if they know of authentic cases of animals being poisoned through eating *Thuya gigantea*. In recent years, on several occasions, specimens of *Thuya gigantea* have been sent to me for naming, the sender stating that cattle had been poisoned through eating this plant. In one case a storm blew some of the branches of *Thuya gigantea* over a cemetery wall, and these branches were eaten by cattle, and some of the cattle died. F. W. Moore.

FRUIT-TREE STOCKS.—The paper on Fruit-tree Stocks (see p. 325) contains several mistakes in dates. Mascul's *New Art of Planting* dates from 1572, not 1652; Lawson's *New Orchard* 1618, not 1656; Austen's *Observations* 1631, not 1653; Evelyn's *Pomona* 1664, not 1678; Switzer's *Practical Fruit Gardener* 1727, not 1731; Hitt's *Treatise* 1755 (the 3rd edition is dated 1768, not 1758). The earliest practical guide to grafting will be found in Fitzgerald's *Boke of Husbandry*, in which the matter is treated in a perfectly lucid manner. "A Pearre or a warden wolde be grafted in a pyrrre stocke, and it ther canst get none than graffe it in a Crabbe tree stocke and it will do well, and some men graff theym in a whyte thorne." "Of all manner of Appels the Crab tree stocke is beste." In *The Countrie Farme* (1600) we gather that Peaches were worked on Peaches, Almonds and Plums, and Pears upon Quinces. Parkinson (1629) mentions several stocks, Crabs, tree stocks and Paradise for Apples, of the latter he remarks: "Being a dwarfe tree whatsoever fruit shall be grafted on it will kepe the graft low like unto itselfe, and yet beare fruit reasonable well. And this is a pretty way to have Pippins Pomegranates,

or any other sort of Apples (as I have had myself, and also seen with others), &c." For Plums he preferred the "White Peare Plumme," because it groweth the goalest and freest," but he had nothing to advance against the black and red Pear Plum nor the white and red Wheat Plum. Some kinds of Nectarines were budded on Apricots, which had previously been worked on a white Pear Plum stock. Peaches were worked on several kinds of Plums. The Creeper Apple was another name for the Dutch Paradise, and grew much stronger than the French Paradise, which was used for pot-grown Apples and dwarfs. For very early noted stocks the list should therefore read thus: 1534, free stock Pear and Apple and White Thorn; 1600, Almonds, Plums, Quinces; 1629, French Paradise, White Pear, Red Wheat, and other large-leaved Plums; 1708, Muscle Plum, by Mortimer; 1731, Creeper, by Miller; 1731, Dutch Paradise. But these dates are only to be taken as representing the years in which they were noted by the various authorities. Parkinson, for instance, was well acquainted with the above and other stocks long before 1629. The Creeper or Dutch Paradise must have been well known long previous to 1731, and, as Dutch Carnations superseded all others after the Revolution of 1688, it is natural to suppose that the Dutch Paradise stock would find its way to England about the same period and for the same reason that the supply from France would be stopped. It will be noticed that double working is advanced from 1653 to 1629. Miller notes the Mahaleb as a likely stock for Cherries, and he and other writers state that the Laurel was employed as a Cherry stock. *R. P. Brotherston.*

I am grateful to Mr. Brotherston for his corrections; had I had the benefit of his wide knowledge of old gardening books and his means of consulting them, it would have lightened my labours in preparing the paper. As it was, I had to do the best I could with the R.H.S. library and that of my grandfather. The books available were not always first editions, and this is not always stated on their title pages. The only accurate dates of origin are those of the broad-leaved and Nonesuch Paradise stocks, the other dates are merely those of the books in which I found the various stocks mentioned. Since, in none of the books is any stock cited as new to horticulture, they must have been in general use some time beforehand. It would be interesting to know if the passages quoted are the same in the earlier editions. I missed Miller's reference to the Mahaleb as a likely stock for Cherries; his statement of the Laurel being used as a Cherry stock is almost as mythical as Leonard Mascall's advice, "To have Cherries on many trees good for to eat unto Allhallowtide ye shall graffe them upon a Willow or Sallow tree, and they shall endure unto Allhallowtide on the trees." The anonymous author of the *Fruit Gardener* (1768) says of Miller, "He is severe against the ancients, where it is evident that he had either not consulted their works or did not understand them; at the same time we find him retailing their prejudices with all the éclat of new discoveries or maxims of his own." *H. Somers Rivers.*

GENTIANA PNEUMONANTHE.—In your issue of November 5, p. 334, Mr. H. Stuart Thompson records the finding of a specimen of *Gentiana Pneumonanthe* with the white flowers having the usual green stripes, in Dorset. It may be of some interest to record that recently Admiral Carr, of Longcross, Chertsey, sent me an exceedingly fine specimen of this plant with white flowers; indeed, so floriferous was it (it bore 18 almost, or quite, open flowers) that at first I could not believe it to be *G. Pneumonanthe* at all. Admiral Carr wrote: "The plant was found on Chobham Common, near this house, about two years ago, and is growing well in my garden." *Gentiana Pneumonanthe* is fairly common here. A plant has been raised from seed of this wild one, also white. A white-flowered form of this plant is mentioned in *D. Gentiana libellus*, by Froslich, published in 1796, but I can find no mention of its occurrence in Britain in any of the floras I have been able to consult. If Admiral Carr succeeds in raising a stock of white-flowered plants, we shall have to thank him for adding a charming variety to those gardens where *Gentians* of this type are good. *Fred. J. Chittenden.*

The Week's Work.

PLANTS UNDER GLASS.

By JOHN DONOGHUE, Gardener to JOSEPH PICKERSGILL, Esq., Bardon Hill, Westwood, Yorkshire.

Plumbago rosea.—This species is one of the most attractive flowering plants to be seen in the houses at this season. It succeeds best when allowed to remain through the flowering season tastefully arranged in an intermediate stove. The atmosphere should be kept somewhat dry, and a little ventilation afforded the plants on all favourable occasions. A very charming effect is obtained if the cut flowers of *Plumbago rosea* are associated with Lily of the Valley or Roman Hyacinths and sprays of Smilax or Asparagus.

Camellia.—During the Chrysanthemum season, Camellias are frequently allowed to suffer for want of water and insufficient feeding at the roots. Give proper attention to these matters, and let the foliage receive a thorough cleansing.

The fernery.—The species of *Adiantum* are always valuable for cutting during the winter months, when their fronds are so useful for associating with cut flowers. Extreme care must be taken to keep the fronds in good condition, by preventing an excessive amount of moisture both in the atmosphere and at the roots. Under favourable conditions, several sorts of *Adiantum* will grow during the winter but the fronds produced at this season seldom possess any lasting properties. The fernery may now be afforded ventilation on favourable occasions and no moisture whatever ought to be applied after noon. Plants which have become unsightly may be cleansed of all the disfigured fronds, and should be placed in a light position in an intermediate house. Keep them somewhat dry at the roots, until the end of the year, at which time they will be ready to start into growth. As soon as growth is discernible apply waterings of soot water occasionally.

The forcing house.—Where cut flowers are in demand throughout the winter, many plants should now be put under the influence of gentle forcing. Lilacs in variety are always in request at Christmas time, and these can be brought into bloom for successional flowering by placing a few plants into heat at intervals. Tulips such as Duc van Thol in separate colours are extremely useful for winter and early spring. Proserpine and Mon Trésor are invaluable from January onwards, and may now be brought indoors at intervals for forcing. Narcissi in variety are almost indispensable for this class of work; these, however, must not be forced too severely, it being advisable to keep them in a warm greenhouse until the flower-buds are in a somewhat advanced state. Care must be exercised with Narcissi at almost every stage of their growth or the flowerbuds will turn blind.

THE KITCHEN GARDEN.

By JOHN DUNN, Kitchen Garden Foreman, Royal Gardens, Windsor.

Rhubarb.—Rhubarb may now be forced, with a good chance of profitable returns, provided the roots are in a fit condition when they are introduced to heat. If they are lifted and exposed to the weather for a week beforehand, they will force all the better. The Mushroom house or any covered place, where a temperature of 55° can be maintained, will answer the purpose well. At Windsor, we prefer a sunken pit, with a slight hot-bed, to any other position. The hot-bed is composed of leaves trodden tightly together, and over the hot-bed are placed a few inches of rich soil. The roots are then put as closely together as possible, without causing them injury, and the space between the clumps is filled with finely-sifted soil, made moderately firm with the hand. If the soil is moist, very little water will be necessary until growth commences, when a gentle watering may be given. Daws's Champion is a good variety for early forcing, and the stems have a fine, rich colour.

Globe Artichokes.—These plants should be protected from frost by placing a quantity of long litter around each clump, but taking care not to cover the plants overhead, or they will soon decay. The ground between the rows should

afterwards be dug, and a good dressing of horse droppings given to it. These plants are more frequently injured by cold, water-logged soil in winter than by frost, and they should not be planted in a low or moist position if it can be avoided.

Asparagus.—Asparagus beds may be divested of all withered stems as soon as possible. The surface of the beds should then be lightly forked over, and a few inches of the loose soil removed in order to make room for a dressing of decayed farmyard manure, after which the alleys may be dug and allowed to remain in a rough state during winter, so that the soil may be fully exposed to the influence of the weather. The preparation of ground for new beds may be taken in hand as soon as possible, and, Asparagus being an important crop, a very thorough preparation should be carried out. The situation should be one exposed to the sun, but sheltered, as far as possible, from the wind, which sometimes causes severe injury to the plants in the autumn. If the land is of a light, sandy nature, the trenching need not be more than 2 feet deep; but a very liberal quantity of farmyard manure should be given, and the beds should be made as near the ground level as possible. On the contrary, if the land is stiff and cold, something more must be done before satisfactory results are obtained. The ground should be drained so that no stagnant moisture will remain about the roots, and the whole bed should be trenched 2½ feet deep. If old lime rubble is available, a quantity may be forked into the bottom of each trench as the work proceeds, and a liberal dressing of farmyard manure mixed with the soil. River sand may also be applied with advantage if the land is heavy, and, when planting takes place, the beds should be raised a few inches above the surrounding soil.

Winter salads.—The materials for forming winter salads constitute an important part of the daily supply. Every attention should be given to the blanching and protecting of Endive. The plants having been removed from the open garden to some rainproof pit, may be easily blanched by tying up each plant separately, or by covering them with clean boards 10 days before they are required for use. Lettuces in pits are more liable to suffer from dampness than Endive, and should be ventilated freely by tilting the lights whenever the state of the weather will permit. Sowings of Mustard and Cress should be made each week in boxes, or on the bed of a newly-started Peach house, covering the seeds with sheets of paper until growth commences.

THE FLOWER GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Hertfordshire.

Lily of the Valley.—The present is a good time to plant crowns of Lily of the Valley. In many places where a border is devoted to this plant the roots are lifted annually, the largest crowns are selected for forcing, whilst the smaller ones are graded for planting, according to their sizes, and thus a good stock is maintained. For forming a plantation, choose a shady position, such as that afforded by a north wall; manure the ground liberally, and apply some decayed leaf-mould, to make the ground as light and rich as possible. The crowns should be planted just deep enough to be shallowly covered, and when this has been done a further covering of 2 inches of leaf soil may be applied.

Christmas Roses.—The beds containing *Helleborus* may now be given a good mulch of decayed farmyard manure, after thoroughly clearing them of weeds and loosening the surface of the soil with a fork. A few plants, if protected with hand-lights, will yield flowers by Christmas or early in the new year, and the quality of these will be much superior to those which flower without protection.

Salomon's Seal.—This plant is of much value for forcing, and the flowers are pretty at any time. The plant is not fastidious as to soil and position, but the roots should be planted in deeply-worked ground and a dressing of manure applied.

The Water Garden.—There is much decaying foliage that may be removed with advantage. These remarks refer to those plants situated at the water's edge, although the tall plumes of

Phragmites communis, and also the Typhas, should be allowed to remain at present, as these retain their decorative value for some considerable time. The water should be kept clear of leaves and other rubbish, and, if it is intended to replant any Nymphaeas or other aquatics, it is well to mark the positions while the growth remains, as afterwards it is often a difficult matter to locate them. Aquatics may be planted or divided at this season during periods of open weather. Plants of an herbaceous character, such as Senecios, Astilbes, Spiraeas, Polygonums, and Helianthus, that grow so luxuriantly may be given a top-dressing of good soil or manure, and any division or replanting may be carried out. The same remarks apply to Irises that thrive well in moist situations, of which *I. Kämpferi*, *I. siberica* and *Pseudocacus* are notable examples. Many other species might with advantage be given a trial, especially in open positions.

General remarks.—Most of the spring bedding arrangements will now be completed, and the beds should have the surface soil raked over. Not only does this improve their appearance but it also encourages the plants. Complete the planting of any bulbs as soon as possible. Frames containing plants of a tender nature should be well protected each evening, and watering should be done sparingly early in the day, carrying out the operation in favourable weather. Abundance of air should be given at every opportunity, but with discretion. Attend to the labelling of plants, and endeavour to label each plant as neatly and durably as possible. Bedding plants in cool houses or frames will need careful watering, and all decaying foliage should be removed. Admit all the light possible by constantly cleansing the glass.

THE HARDY FRUIT GARDEN.

By A. R. SEARLE, Gardener to the Marquis of NORTHAMPTON, Castle Ashby, Northamptonshire.

Pruning of wall trees.—This operation being one of great importance, it should be performed by someone who has had considerable experience not only in pruning itself, but in the habits and cropping qualities of the different varieties. Apricots and Plums, but Apricots in particular, are apt to lose some of their branches without any apparent reason for the failures. In such cases the dead branches should be removed before the general pruning is begun, for it will be necessary to re-arrange the whole of the tree in order to furnish the gaps. Both kinds of fruit produce the best specimens principally on shoots formed in the previous year, but they also fruit freely on spurs. Owing to the better specimens being produced on the shoots of the previous season, it is desirable to retain a sufficient number of these growths in the tree, but a desire to save these shoots should never be encouraged to the extent of causing overcrowding of the branches. Shoots of medium strength may be left intact, but the stronger ones should be pruned to half their length. In cases of old-established trees, where the spurs have become long and unsightly, a few of the worst of these may be shortened or thinned out each year at pruning time. All spur growths of the current season should be cut back to two or three buds, and care should be taken to make the cuts very smooth; therefore, a knife with a keen edge should be employed for the purpose. Sweet Cherries require similar treatment to that I have already described.

Apples, Pears and Plums.—When these fruits are grown as bush and pyramidal trees they should have the extension shoots pruned to within 9 or 10 inches of their origin, cutting back all other shoots to within two buds of the base. Allow the main branches plenty of room and avoid overcrowding the smaller shoots. Old-established trees with greatly-expanded and over-numerous spurs may be treated as I have advised for Apricots and Plums, shortening or thinning out a portion of the spurs this season and a few more next year. It must always be remembered that certain varieties of Apples and Pears form their flower-buds at the ends of the shoots. Amongst Apples of this type may be instanced Irish Peach, Mr. Gladstone, Yorkshire Beauty, Bismarck, and Worcester Pearmain. Such varieties should never be subjected to what is known as summer pruning. In the case of orchard trees it is advisable to lock them over every

second year, removing any branches that cross other branches and cutting out any which are weak or useless. Endeavour to keep the centre of each tree open, so that all the shoots will be exposed to the influences of light and air.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Sarum.

Bollea and Zygopetalum.—Plants of the Bollea section of the genus Zygopetalum, as *Bollea caelestis*, *B. Lalindii*, *Pescatorea Klabochorum*, *P. cerina*, *P. Lehmannii*, *P. Dayana*, *P. Roezlii*, *Huntleya meleagris*, *H. albida*, *W. Wailesiana*, *Batemannia Burtii*, *B. Collei*, the hybrid *Bollea-Chondrorrhyncha Froebeliana*, *Chondrorrhyncha fimbriata* and *C. Chestertonii* are growing freely and pushing forth roots into the compost. As the night temperatures are getting low in the cool intermediate house, the plants should be removed to a cool part of the Cattleya house for the winter. Whilst these plants do not succeed in low temperatures, neither do they thrive if the heat is more than they require, especially in winter. At Burford, they do best in a temperature varying between 55° and 60°, and in a position well up to the roof glass, but where they are not exposed to the least sunshine, even in winter. The atmosphere surrounding them should be kept constantly saturated, and the Sphagnum-moss on the surface of the pots sufficiently moist to keep it fresh and green. The foliage should be sprayed lightly overhead several times a day with tepid rain water. In spite of all this dampness a small species of red spider will often attack the undersides of the leaves, and the pest must be quickly eradicated by the use of the sponge. Any plants in need of fresh rooting material, or larger receptacles, may now be given attention: the pots or pans should be drained to about three parts of their depth, and they should be rather large in comparison to the sizes of the plants. The compost may consist of three-parts Sphagnum-moss to one of *Osmunda* fibre, cut up moderately fine, and plenty of small crocks mixed with them to assist the drainage. In potting, press the materials just sufficiently to make the plants firm, and keep plenty of the living heads of the Sphagnum on the surface. The rare *B. Lindenii*, now in flower, thrives well in the intermediate house the whole year round, in a position under the shade of large *Sobralias* and tall-growing *Epidendrums*. Plants of *Cattleya labiata*, *C. Bowringiana*, *C. Dowiana*, and its variety *aurea*, as they pass out of bloom, should be placed in the coolest and best ventilated part of the Cattleya house for their long period of rest. See that the old flower-sheaths are cut off close down to the apex of the pseudo-bulb, as sometimes moisture accumulates at the base of the sheaths, and frequently the plant is lost from this cause. Sometimes disease is caused by affording the plants too much water at the root when the flowers are pushing up through the sheath, the extra water being given with the idea of getting better flowers; but the ill-effects occur soon after flowering; and when the plants are at rest. From the present time water at the root is only necessary at long intervals, sufficient being applied around the edge of the compost to keep the pseudo-bulbs plump, the object being to induce root action, and yet prevent premature growth.

Cattleya and Lælia.—These remarks are also applicable to many of the hybrid *Cattleyas* and *Lælias* which bloom at this season. Plants which require repotting may be seen to as soon as roots are observed pushing from the base of the current season's growth, but if they have produced such roots while in bloom, repotting may be postponed till new growth commences. *C. Lawrenceana* should now be elevated well up to the light, and small plants suspended near to the roof glass at the warm end of the house. Afford water very cautiously, as the young breaks are apt to decay if too much is applied. Plants of *C. Trianae* having completed their growth, should be kept only just moist at the roots, but immediately the flower-spikes are seen to be pushing up at the base of the sheaths, a little extra moisture will be necessary. The watering of *Cattleyas* and *Lælias* during winter is often a difficult matter to the beginner in Orchid culture; in many cases the plants are kept far too wet. On a fine, sunny morning the grower is tempted to afford the plants a good watering, and this being done, it often happens, that for many days afterwards the

weather is dull and wet, and the plants, especially specimens in large pots, do not dry in the least, and the roots and pseudo-bulbs take up far more water than they need. It is safer to keep the plants a little on the dry side.

FRUITS UNDER GLASS.

By B. GOODACRE, Gardener to Sir Ernest Cassel, G.C.B., Moulton Paddocks, Newmarket.

Late Grapes.—Late Grapes still in the vineries will require considerable attention if the fruit is to be preserved in good condition. Examine the bunches about twice each week and remove any unsound berries, as a decaying and mouldy berry soon contaminates others with which it comes in contact. Maintain the temperature as near 45° as possible, keeping a gentle warmth in the water pipes to dry the atmosphere. No plants or cutting boxes which require water must be placed in the house, as the moisture thus created would prove injurious to the Grapes at this season of the year. Where lack of space compels the house to be utilised for such purposes, it is preferable to cut and bottle the Grapes, placing the bottles in a cool fruit room. If the border is partly outside, as is often the case with late vineries, some protection from heavy rains must be afforded. A few pieces of corrugated zinc, spare frame lights, or, failing these, a 2 feet thickness of leaves or loose litter will prevent saturation and keep the soil fairly warm and dry.

Early pot vines.—The house containing these may now be closed, and the young vines treated as advised in a previous Calendar. Take care that the night temperature is not allowed to exceed 45° by fire heat; during severe weather it is advisable to allow the temperature to fall a few degrees rather than have a dry, fiery atmosphere before growth has started.

Early permanent vinery.—This structure having been cleaned, and the vines pruned, as already advised, may now be closed, in order to provide a successional crop to that afforded by the pot vines. Even when both houses are started simultaneously, the pot vines will ripen their fruit first, as the roots being more confined, they respond quickly to the action of liquid manures, and the vines being raised from "eyes" every year, it is not necessary to consider the future welfare of the plants when high temperatures are desirable to hasten the ripening of the berries. The fermenting material having been mixed and allowed a short time to "sweeten," may be brought inside and placed, ridge-fashion, along the border. Turn the heap several times each week, so that it gives off a gentle heat, adding a little fresh material, and removing part of the old, as necessary, until growth is fairly advanced on the vines. When a bed of such material in a house is continually giving off a slight steam or vapour, but little syringing of the rods is required to induce the shoots to break kindly into growth, and the warmth generated renders the use of fire heat seldom necessary, therefore, much of daily damping of floors and borders is saved. Admit air freely on fine days, closing the ventilators at about midday in order to raise the temperature about 10°. Whenever mild weather prevails outdoors, a "chink" of air may be left at the top of the house over night.

Later vineries.—The vines in these houses may be pruned as soon as the wood is mature. Those houses which are to be started at the New Year ought to be pruned and cleaned without delay, cleaning and airing the houses freely for a few weeks before starting the vines in the same way as advised for Peaches in last week's Calendar. When pruning, select such shoots as are required for use in grafting or for rooting as "eyes" next season, picking out well-ripened shoots with good plump buds. Label the shoots, tie them in bundles and "heel" them in on the north side of a wall until required.

Outside borders.—Any early vineries which have the roots partly outside must be given adequate protection before the soil gets cold and soddened through heavy rains. This work ought to be done at once. A coating of leaves and fresh litter from the stables in equal proportions should be placed on the border to a depth of 18 inches or 2 feet and covered with boards or zinc to expel the rains.

Errata.—In the list of Plums given on p. 334, a comma should be placed between Kirke's and Transparent Gage.

EDITORIAL NOTICE

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Special Notice to Correspondents.—The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

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APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, NOVEMBER 22—
Royal Hort. Soc. Coms. meet. (Lecture at 3 p.m. by Mr. Jas. Hudson, on "Plants in Congenial Positions.")
Horticultural Club Meeting.

FRIDAY, NOVEMBER 25—Aberdeen Chrys. Sh. (2 days).

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich—42°6'.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, November 16 (6 P.M.): Max. 48°; Min. 31°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, November 17 (10 A.M.): Bar. 30.1; Temp. 39°; Weather—Slight mist.

PROVINCES.—Wednesday, November 16: Max. 46 Cornwall; Min. 26 England L. coast.

SALES FOR THE ENSUING WEEK.

MONDAY, TUESDAY, WEDNESDAY, THURSDAY AND FRIDAY—
Dutch Bulbs, at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

TUESDAY—
Clearance Sale of Nursery Stocks, at Lees Nursery, Feltham, by Protheroe & Morris, at 12.

WEDNESDAY—
Roses, &c., at 12.30; Palms and Plants, at 5; at 67 & 68, Cheapside, E.C., by Protheroe & Morris.
Annual Sale of Fruit Trees, &c., at Platt Nurseries, Borough Green, Kent, by order of Mr. J. Todman, by Protheroe & Morris, at 11.30.

FRIDAY—
Orchids, in variety, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

All botanists will unite in congratulating Professor F. O. Bower on his award of one of the two Royal Medals conferred during the present year. The Royal Medals are awarded annually by the Sovereign, upon the recommendation of the Committee of the Royal Society, "for the two most important contributions to the advancement of natural knowledge published originally in his Majesty's dominions within a period of not more than 10 years and not less than one year within the date of the award."

Professor Bower, who was born in 1855, is the son of A. Bower, Esq., of Elmcrofts, Ripon, Yorkshire, and has, as his portrait suggests, all the sturdiness and geniality of the typical Yorkshireman. After distinguishing himself at Cambridge, Bower proceeded, like many of his botanical contemporaries, to complete his scientific education under those distinguished botanists, Sachs, of Würzburg, and De Bary, the great pioneer in the scientific investigation of plant diseases, of Strassburg.

On his return to England, Bower acted first as assistant to Professor Oliver at the University College, London, and in 1882 became lecturer in botany in South Kensington, in which position he had the great advantage of serving under Huxley. Three years later, in 1885, Bower was appointed by the Crown to the Chair of Botany in Glasgow, which post he still holds. By no means an armchair or mere laboratory botanist, Professor Bower has travelled widely in America, in Ceylon, and more recently in Jamaica. As is natural with so strenuous and able a man, he has been the

recipient of many marks of distinction. Elected a Fellow of the Royal Society in 1892, he became an honorary member of the German Botanical Gesellschaft in 1907, and a corresponding member of the Bayerisch Academy in 1907.

Professor Bower's contributions to botanical science have consisted in a long series of important memoirs, all bearing upon the processes of evolution, whereby the higher plants of the present day have arisen from simple ancestors. These researches he summarised recently in a volume, reviewed in our columns (May 3, 1908), entitled *The Origin of a Land Flora*. In addition to his own contributions to botanical science, Professor Bower has rendered signal service in training men, imbuing

subjected. One plant of this Bramble was discovered in 1898, "growing on the floor of the Taxad forest (Dacrydium forest, probably) at Inchbonny, near Lake Brunner, Westland." Some rooted pieces were brought away and cultivated under ordinary conditions at first, and then under different conditions of dryness and exposure, in order to bring it to flower, but hitherto without success. *Rubus Barkeri* is a small trailing shrub allied to *R. parvus*, but differing from this species in the possession of mostly trifoliate leaves and in certain other respects. Dr. Cockayne is unable to decide whether it is a genuine species; a hybrid—perhaps between *R. australis* and *R. parvus*—or, as seems most likely, a juvenile stage



PROFESSOR F. O. BOWER.

them with his own energy and enthusiasm, and so making sure provision for the further advancement of the science to which he has devoted his life.

A Non-flowering Species of *Rubus*.

The common Ivy (*Hedera Helix*) and *Ficus pumila* (*F. stipulata*) are familiar instances of plants that never flower under certain conditions; but, if the conditions alter, the same individuals may flower freely. Dr. L. Cockayne describes a New Zealand Bramble (*Rubus Barkeri*) in the *Transactions of the New Zealand Institute*, vol. xlii, p. 325, which fails to produce flowers under the most diverse conditions to which it has been

of the latter. Whatever its origin may be, it is a very ornamental plant for the rock-garden, on account of the colouring of its elegant leaves, and, as it is easily propagated vegetatively, it will probably soon reach this country. This Bramble is all the more a puzzle on account of the singular and somewhat contradictory physiological phenomena presented by other New Zealand species, as observed and recorded by Dr. Cockayne. Four native species are recognised by Mr. Cheeseman in his *Handbook*. *R. australis* has polymorphic leaves and climbs to the top of the loftiest trees, whilst *R. parvus* is a trailer with branches less than 2 feet long. Concerning the other two species, indigenous to New Zealand, Dr. Cockayne says that they

behave abnormally. *R. schmidelioides* has a juvenile form, distinct from the adult, and the former, though attaining great dimensions, never flowers, whereas the juvenile form is a plant of the forest floor, the adult form of *R. schmidelioides* grows as a liane, that is, a climber over trees, and, having gained a more advantageous position with regard to the illumination, flowers abundantly. Here then the shade form is the non-flowering, and in this respect resembles *R. Barkeri*.

LÆLIO-CATTLEYA WALTER GOTT (C. BICOLOR × L.-C. BLETCHLEYENSIS).—Our illustration (fig. 158) represents this new hybrid, which is named by Messrs. SANDER & SONS after their Orchid hybridist, Mr. WALTER GOTT, who, for a considerable time, has had charge of their Orchid hybrids in the St. Albans nursery. The batch of seedlings raised from this cross showed very great variation in the size, form, and colour of the flowers, one section partaking most of *C. bicolor*, with its labellum pro-

ROYAL HORTICULTURAL SOCIETY.—The fortnightly meeting of the committees will be held on Tuesday next, the 22nd inst. At the afternoon meeting, Mr. JAMES HUDSON, V.M.H., will give a lecture on "Plants in Congenial Positions."

THE KEW GUILD.—We are informed that Mr H. COWLEY, assistant editor of *The Garden*, has been appointed secretary to the Kew Guild and editor of the *Journal* until the next annual meeting. Past Kewites are earnestly invited to assist



FIG. 158.—LÆLIO-CATTLEYA "WALTER GOTT": SEPALS AND PETALS, APRICOT-YELLOW; LIP, REDDISH-VIOLET.

In the case of *R. cissoides* var. *pauperatus*, the opposite occurs. This plant, when growing as a shrub in the open, its leaves reduced to midribs, rarely, or probably never, flowers; but when sheltered, or when a liane in the forest, its leafy shoots bloom abundantly. That the leafy and leafless forms are one and the same species Dr. Cockayne's culture experiments have fully proved.

jected on a more or less narrow isthmus. The variety illustrated was shown by Messrs. SANDER & SONS at a meeting of the Royal Horticultural Society on November 8 last. The sepals and petals are of a clear, apricot-yellow tint, shaded with rose-pink; the front of the lip is deep reddish-violet, the light, rose-tinted side lobes being marked with purple. In this variety there is a decided suggestion of *C. Warszewiczii*, which, with *L. tenebrosa*, produced *L. C. Bletchleyensis*.

in making the *Journal* as interesting as possible by contributing short notes. All communications should be addressed to Mr. COWLEY, South Side, Kew Green, Kew.

NURSERYMAN AS MAYOR.—At the annual meeting of the Colchester Town Council, Mr. FRANK CANT, the well-known Rosarian, of the firm of Messrs. FRANK CANT & Co., was elected Mayor for the ensuing year.

NATIONAL VEGETABLE SOCIETY.—We learn that, owing to representations from many of the smaller country competitors, the National Vegetable Society has arranged to hold its next exhibition at a rather earlier date than was the case this year. It will, therefore, take place at the Royal Horticultural Hall, on August 30. The accounts ending September 30 have been audited, and a report is being prepared upon the work done by the Society during the past year. Copies of the report will be furnished to the members before the annual general meeting takes place on December 6 next. The accounts show a satisfactory balance. In regard to next year's trials, seeds have been sown at Sutton Green, and the liberal manner in which these have been supplied by the trade is much appreciated by the committee.

NATIONAL CHRYSANTHEMUM SOCIETY.—We may remind readers that the annual dinner will be held on Tuesday, November 29, in the Holborn Restaurant. The President, Sir ALBERT ROLLIT, will occupy the chair. The Secretary, Mr. RICHARD A. WITTY, 72, Savernake Road, Gospel Oak, London, will be pleased to hear from those intending to be present.

CHRYSANTHEMUM CONFERENCE.—The National Chrysanthemum Society will hold a conference at Essex Hall, on December 5. The conference will be divided into two sessions, afternoon and evening, when the following papers will be delivered:—Afternoon Session: Chairman, Sir ALBERT ROLLIT, LL.D., D.C.L. (President of the Society); 3 p.m., paper by Mr. NORMAN DAVIS entitled, "The Culture of Japanese Chrysanthemums for Exhibition"; 4 p.m., paper by Mr. W. HIGGS entitled, "The Culture of Incurved Chrysanthemums for Exhibition." Evening Session: Chairman, Mr. THOMAS BEVAN (Chairman of the Executive Committee); 6.30 p.m., two short papers by Mr. H. J. JONES and Mr. R. F. FELTON on the "Methods of Exhibiting Japanese and Incurved Chrysanthemums," and "The Use of Large Blooms in Floral Decoration," respectively; 7.30 p.m., paper by Mr. THOS. STEVENSON entitled, "Late Struck Japanese Chrysanthemums for Exhibition." From 3 p.m. to 9 p.m. an exhibition will be held in the large hall. The proceedings of the conference will be concluded about 8.30 p.m., so there will be an opportunity for members who may arrive late to inspect the exhibits between 8.30 p.m. and 9 p.m.

BIRMINGHAM CHRYSANTHEMUM SHOW.—Amongst awards made to non-competitive displays at this exhibition were large and small gold medals. Messrs. THOMSON & Co., 20, High Street, Birmingham, inform us that they were awarded one of the large gold medals for their display of vegetables, referred to on p. 363.

MR. JOHN LAMBERT.—The many friends of Mr. LAMBERT, gardener at Powis Castle, will be sorry to learn of an accident that befel him. Owing to the slipping of a ladder, on which he was standing, Mr. LAMBERT fell a distance of several feet, fracturing four ribs. It is reassuring to know he is progressing favourably towards recovery from his injuries.

GARDENER'S GOLDEN WEDDING.—Mr. and Mrs. JAMES SMITH, Bannockburn Road, St. Ninian's, Stirling, recently celebrated their golden wedding. Mr. SMITH, who is in his 76th year, is a native of Perth. He began his gardening career at Abercainry, Crieff, and after various appointments was, in 1860, appointed head gardener at Lazonby Hall, near Carlisle. Mr. SMITH has also held the post of gardener at Craigton, Fintry, Stirlingshire (for 25 years), at Tullichewan Castle, Dumbartonshire, and at Randolphfield, Stirling.

SCOPE OF A PUBLIC PARKS DEPARTMENT.—The next meeting of the members of the Horticultural Club should be of especial interest at the present time. Mr. W. W. PETTIGREW, Superintendent of the City Public Parks Department (Cardiff), will deliver a lecture on "The Aims and Scope of a Public Parks Department." The lecture is to take place on Tuesday, the 22nd inst., at the Hotel Windsor, and the subject will be illustrated with lantern slides.

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

NOVEMBER 8.—Present: Mr. E. A. Bowles, M.A., F.L.S. (in the Chair), Dr. A. B. Rendle, Messrs. A. W. Hill, J. Fraser, C. E. Shea, E. M. Holmes, C. H. Hooper, W. C. Worsdell, and F. J. Chittenden (hon. sec.).

Fruit of *Musa ventricosa*.—Mr. W. C. WORSDELL showed a fruit of a species of *Musa*, probably *M. ventricosa*, which he had collected in the northern Transvaal, the plants growing in a grove on the edge of the forest just where it joins the high veldt.

Pollen of Apples, &c.—Mr. C. H. HOOPER showed photographs of the pollen of several kinds of fruit trees and bushes.

Malformed Pears.—Mr. E. A. BOWLES showed on behalf of Mr. HOOPER PEARSON some so-called proliferous Pears (see figs. in *Gard. Chron.*, October 8, p. 272). This malformation is not uncommon, and is explained by the fact that the fleshy part of the Pear is an axial structure, not a part of the ovary. The fruits are merely extensions of the axis without the formation of carpels.

Triple flower of *Dendrobium formosum*.—Mr. L. CRAWSHAY made the following report on the flower referred to him from the last meeting:—This flower was developed near the apex of an inflorescence bearing normal ones; it is about half as large again in all its parts. The normal flowers consist of six perianth segments, the petals much broader than the sepals, two of the latter, together with the labellum and column, being prolonged backwards to form a spur. The spur is complete posteriorly by the cohesion of the posterior margins of the lateral sepals, but is split almost to the apex anteriorly, on account of the corresponding margins of the lateral sepals being free. The abnormal flower showed five sepals and three petals, a double labellum and triple column, the middle third of which being the smallest. It is formed of three flowers, the laterals being set nearly at right angles to the median one. Each lateral flower consisted of two complete sepals, two petals (one on the labellum), and a well-developed spur. Each also accounted for one third of the column, and bore a normal pollen apparatus. The posterior petal (dotted), showed traces of a dividing line, and represented the two contiguous petals of the lateral flowers, whilst the anterior sepal (lined), similarly represented two lateral sepals. The only evidence of the median flower was in the ovary, and the middle third of the column, which was barren. Instead of the characteristic triangle, the ovary showed an oblong section, and only five placental areas had been differentiated.

LECTURE ON THE BLOSSOMING OF FRUIT TREES.

At the afternoon meeting on November 8 Mr. Hooper delivered an address entitled "Observations on the Blossoming of Hardy Cultivated Fruits." The lecturer stated that he compiled notes during three seasons on the blossoming of fruit trees, with the object of ascertaining the critical stage in the flowering period, when the blossoms were most susceptible to injury by frost. He stated that during the last two years (1909 and 1910), and more particularly this year, the shortage of Plums, Pears and Apples would seem to be due to dull, cold and rainy weather whilst these trees were in flower. In 1908 the weather at the flowering time was generally sunny and dry, although there was slight frost on two or more nights, but the flowers being dry, little or no

injury seemed to follow, as there was a good crop of all fruits.

The importance of insects in the transference of pollen from one flower to another has for long been known to be advantageous, being in some cases essential for the production of fruit, but it has been more recently noticed that in the case of Apples and Pears cross-pollination is, with some varieties, absolutely necessary.

In some fruits the stamens are mature and shed their pollen before the stigma or stigmas of the same flower are mature, in others, including the Apple and Pear, the stigmas are mature and ready to receive the pollen before the stamens shed their pollen.

Red Currants have a longer flowering period than Gooseberries. In 1909 they commenced to flower about April 19, were in full flower by April 29, and had all set fruit by May 21. Picking began on July 12. The pollen of Red Currant is almost spherical; it is adhesive, and seems to be shed only during a short period compared to the long time the flower is open. The stamens and pistil come to maturity simultaneously.

In 1909 Black Currants commenced to flower about April 19, were in full bloom by May 7, and the flowers set by May 21; picking began on July 14. The pollen of the Black Currant is plentiful, spherical in shape, very adhesive, clinging together in a mass; the flowers are visited by hive and bumble bees. The stamens and pistil come to maturity simultaneously. The leaves are fully expanded before flowering commences. In 1909 berries had coloured by the commencement of July.

The Gooseberry is usually the next fruit to open its flowers after the Cob; they are in flower about four weeks on an average, and the fruit is ready to pick green about a month after being in full flower. In Gooseberries the flowers and leaves open about the same time. The flowers at the tips of the branches open last. The Gooseberry is protandrous, i.e., the stamens shed their pollen before the stigmas are in a suitable condition to receive it. The Gooseberry flower is said to have lost the power of self-fertilisation.

The Red Currant is generally the next fruit to blossom after the Gooseberry, but it is not so uniform in its flowering as the latter; thus one bush may be in flower earlier than another, and the same way with the branches.

In Plums the stamens and stigma mature very nearly at the same time. Taking an average from records of several years, in different parts of England, the following appears to be the approximate order of flowering: In 1908, average 10 different varieties, in flower 17 days (11 to 24); full 8½ (7 to 10).

In 1909, average 7 different varieties, in flower 18 days (15 to 24); full, 7 (6 to 8).

In 1910, average 8 different varieties, in flower 23 days (20 to 26); full, 7½ (6 to 10).

The period of duration of an individual Plum flower is about six days.

It has been observed that Rivers's Early Prolific is self-fertilised with the greatest difficulty, only setting nine Plums out of as many thousand of flowers, whereas Victoria is completely self-fertile. The Histon Apricot Plum, the Blue Bullace, and the Sloe are self-fertile.

As the total flowering period of the different varieties of Plums is about 25 days at Wye, and probably about the same in other parts of England, both the earliest and latest-flowering varieties have a considerable portion of their flowering period in blossom at the same time, which assists in pollination. Practice teaches that a mixture of two or more varieties in a plantation is advantageous for cross pollination, and that bees in the vicinity of a plantation are helpful, especially in a wet season, as they come out during the fine intervals and assist in the work of cross-fertilisation.

At Wye in 1909 the flowering of the Raspberry commenced on May 24; the plants were in full flower on June 3, and finished flowering about the July 6; picking began on July 14.

In 1910 the first flowers opened on May 24.

Mr. Hooper stated that this year he placed paper bags over three bunches of Raspberry flowers, before any of the blooms had opened, and was surprised on untying them later to find fruits were almost as plentiful as on those bunches open to insects.

In Pears generally the varieties keep to a definite order of flowering, though some varieties are more constant to an order than others.

In 1909 the different varieties of Pears were in flower at Wye from April 26 to May 18; the crop was moderate. The average duration of flowering of 15 varieties was about 14½ days, in 1908 it was 17 days. The trees were in full bloom about the seventh day after commencing to flower. The following varieties of Pear appear to be specially good pollen producers: Beurré Clairgeau, Pitmaston Duchess, Catillac, Marie Louise d'Uccle, Clapp's Favourite, and Doyenné du Comice. When the Pear flower opens the stamens are curled inwards and are immature, while the stigmas are ripe and ready for pollination.

The time of flowering in the Apples, said Mr. Hooper, is not appreciably influenced by the stock, although there is probably a slight advantage in earliness in the case of those grafted on the Paradise stock. Apple flowers that have been fertilised are more capable of resisting damage by frost. In America the average time of the duration of blossoming is nine days, whereas in this country the trees are in bloom about 20 days. It has been found that when single trees of Apple and Pear are isolated from other trees they bear little or no fruits.

PARIS INTERNATIONAL SHOW.

(Concluded from page 362.)

Miscellaneous groups of flowers were probably not so numerous as we have seen at some of the autumn shows in Paris. Part of the central design of the ground plan consisted of a hollow square with rectangular corners and several beds in the middle. There were paths intervening to allow visitors to walk all round the beds inside the square and outside. At the corners Messrs. CAYEUX & LECLERC staged collections of Cactus Dahlias in great variety, all the specimens being arranged in large, loose bunches of one variety.

Close to this exhibit were several displays of Carnations shown by Messrs. LEVÉQUE & SON, but the groups were not arranged with such artistic taste as was adopted by Mr. Engelmann, of Saffron Walden, at the Brussels and Paris Exhibitions in April and May last.

Messrs. W. WELLS & Co. staged a vase of their new Carnation White House. Carnations, mostly French-raised varieties, were also set up by "OEUILLETS COTTAGE," but by far the most attractive exhibit was shown by Mr. ENGELMANN, who had a beautiful group lightly arranged in huge bouquets in tall vases of varying heights. This collection was in every respect well worthy of British horticulture, and received a high award, and a Special Silver Medal was awarded for the variety Carola. Other varieties included Beacon, Winsor, Regina, May Day, Defiance, Lucille, Harlequin, Enchantress, Victory, and Britannia. Mr. GEO. BOUTHER, a well-known grower of Clematis, exhibited fine specimens of La France, Modesta, Proteus, Ville de Lyon, Venosa, Nerves, Marcel Moser, and other varieties set up with great taste in a long border on the outer side of the hollow square previously referred to.

Messrs. G. & A. CLARK, LTD., Dover, were the only other English exhibitors. They staged a miscellaneous collection of cut flowers, comprising single Chrysanthemums, Pompon Dahlias, and two large vases of decorative Chrysanthemums. Several pretty groups were shown by M. FÉRARD, consisting of Cyclamen and Astilbe (*Spiræa*) japonica, with a neat, narrow edging of *Primula obconica*. The same flower was shown also by Mr. J. B. CALAIS. M. AUBERT-MAILLE had a prettily-arranged group of Cyclamen, Begonia Gloire de Lorraine, B. Turnford Hall and B. Patrie. A choice collection of Japanese Lilies in pots was shown by M. LEON FONTENAU.

Two of the most dazzling exhibits came from Messrs. VALLERAND and BILLARD, both specialists. Their groups extended across the hall in a straight line, and had a semi-circular front in the middle. Huge blooms of tuberous-rooted Begonias formed the major part of these two exhibits. Foliage Begonias of the Rex type were exhibited by M. CHASSET in a nice little collection close by. M. DÉSIRÉ RAMELET put up a pretty bank of Bouvardias in variety and ferns.

The principal feature of the show in the floral classes consisted of Chrysanthemums. By far the grandest contribution in the exhibition was that made by Messrs. VILMORIN, ANDRIEU & Co. It occupied almost the central position and

covered an area of, approximately, 8,000 square feet. It was one of the grandest and most comprehensive exhibits of Chrysanthemums we have ever seen displayed by a single firm, and consisted of pretty, freely-flowered bush plants bearing large blooms and trained specimen plants of pyramid form. The latter varied from the round pyramid to those having four sides in the Japanese fashion, with rows of flowers one above the other. There must have been several hundreds of blooms on some of these plants, and the whole exhibit, broken up here and there by pathways, was shaped and designed in a most effective manner. The collection was relieved on one side by a fine bank of *Gerbera Jamesonii* raised by M. ADNET, of Cap d'Antibes, a delightful piece of floral decorative art. The Chrysanthemums must have numbered several hundred varieties, and the whole collection was edged with a narrow border of the Pompon variety Gerbe d'or. We have only space to name a few of the best varieties. Among the bush plants were E. J. Brooks, Chenon de Leché, Mme. Ed. Roger, Merstham Yellow, Leslie Morrison, Mlle. Anna Debono, W. Duckham, R. Hooper Pearson, W. Mease, Pockett's Crimson, Alec. Payne. Trained specimens included Ch. Schwarz, Banquise, Loiseau Rousseau, M. Pechou, Congrès de Caen, Mara, Ville de Phenice and other varieties not known to English growers.

M. AUG. NONIN filled a long border with pot plants staged along the side of the show hall. In front were some decorative sorts, including Eldorado, a new yellow variety; Figaro, a new bronze; and Purpurine. New exhibition Japanese varieties were seen in Mme. Jules Rossi, Secrétaire A. Gillard, Mme. Rose Jaumond, Mme. Cecile Bultel, and Mme. Leon Grosjean. A goodly representative collection of standard sorts was also staged, besides a number of singles.

Other plant exhibits came from M. GASTON CLEMENT, who had a fine corner group of Berthe Lachaux, a new Japanese variety of a pretty lilac mauve colour; and from M. PINON, who sent a most original collection of specimens trained in all kinds of fantastic forms.

THE ECOLE HORTICOLE DE PLESSIS-PIQUET, M. ZIMMERMANN, M. MADELAINE and M. MASCAUX also showed in the plant classes.

In the cut-bloom section there were numerous exhibits. Some of them contained very excellent blooms; they were not set up in vases or on boards placed on tables, but were arranged in beds of varying shapes on the ground level and edged with turf.

The section for new seedlings was largely filled, the best collection being shown by Mme. CALVAT, who had some very large blooms, five of each variety, and for which a Prix d'Honneur was awarded. Other exhibitors of seedlings were Messrs. DOLBOIS, MARQUIS DE PINS, PAUL RAILLON, LIGER-LIGNEAU, NONIN, ROZAIN, CHANTRIER, MONTIGNY, CLEMENT, TRAISNEL, VILMORIN & Co., DECAULT, HERAUD, BACQUE, and MARTIN. A special prize of £4 was awarded to Mme. CALVAT for the best novelty in the show. It was a Japanese variety named Petite Helene de Tialet. The other cut-bloom classes were well filled, and some were of very large extent. The principal exhibitors were Messrs. LEVEQUE, VERNIER FRÈRES, MARTIN, DUBUISSON-FOUBERT, who had some enormous blooms of F. S. Vallis; FÉRARD, who had two large groups of singles; MONTIGNY, who staged novelties of 1909 in a border of great length; RAGOT, BACHET, and others. M. PAUL FERON put up some grand flowers in stands resembling stumps of trees placed at intervals on a square bed. He had in fine form Mme. G. Rivol, F. S. Vallis, W. R. Church, W. Mease, Mary Mason, and others. Of special merit was a beautifully-arranged circular group set up by M. DURAND, of Brévannes. Vases contained grand flowers with smaller vases around the outer edge judiciously intermingled with autumn foliage. Solid Japanese blooms of the greatest size and substance demonstrated the fact that M. DURAND is a grower of no ordinary skill. His chief flowers were W. Mease, Mme. G. Rivol, Pockett's Crimson, Mme. Paolo Radaelli, Polyphème, F. S. Vallis, Ferd de Bièvre (grand), and others of the same type.

On a circular bed, with blooms in short vases, was a collection of yellow Japanese varieties, chiefly F. S. Vallis, set up in fine style by M. GEO. TRUFFAUT. In the centre there arose a huge monument 15 feet high built up of F. S. Vallis blooms intermingled with autumn foliage. It was a superb work of floral art and one of the most striking features of the show.

M. H. CRÉPIN arranged a somewhat similar group rather different in form. The ground plan was a square; at each of the four corners was a huge trained pyramid plant, and from the centre a peculiar form of trained plant of considerable height. Around the base was a large number of blooms of Mme. Ed. Roger encircled with a row of Rose Poitvine and an edging of Baronne de Vinols, certainly a most original conception.

We must pass on towards the end of the show, and what remains can be but briefly described. Chrysanthemum exhibits that attracted our attention were those of the ASILE DE VILLE EVRARD, HÔPITAL ST. ANTOINE, ALP. COURBRON, who staged an unusual lot of the Caprice du Printemps Sports; ALP. SIMON, LECLERC, CARNAT, LANDEROUIN, and ECOLE ST. NICOLAS.

Some groups in which extra fine show flowers were shown were staged by M. CHARVET, M. ROSETTE, M. MARCEL, PECQUEUX, and PAUL LABBÉ. A gigantic, circular, pyramid-trained plant 7 feet in diameter, and about the same in height, was shown by M. H. CRÉPIN; it carried several hundred medium-sized blooms, being a prominent feature.

The exhibition may well be described as international, for, beside the English exhibitors, the jury was composed of representative horticulturists from England, Belgium, Italy, Holland and Germany. The English members were Mr. Harman Payne, president of the first section and president of the Floral Committee; Mr. Thomas Bevan, president of the third section; Sir Albert Rollet, president of the fourth section; Col. Prain, president of the seventh section; and Mr. Geo. Schneider, president of the eighth section. On the evening of the second day of the Show the whole of the jury was entertained by the National Horticultural Society of France at a reception in the hall of the Société, when Mr. Viger presided.

On Sunday the members of the congress and the jury went to an enjoyable excursion. Carriages were provided, and visits were made to the Luxembourg Gardens and to the Natural History Museum. A lunch was given to the party at the Palais d'Orsay. M. Viger presided, and repeated his welcome expressed the previous evening. Other speeches and replies were made by Messrs. Geo. Truffaut, Ph. Rivoire and Harman Payne. The party then left for a drive in the Bois de Boulogne and a visit to the City of Paris horticultural establishment, where the numerous greenhouses were inspected. The following is a list of a few of the most important prizes awarded:—

The Premier Grand Prix d'Honneur offered by the President of the French Republic was won by VILMORIN, ANDRIEU & Co. for Chrysanthemums. The second Grand Prix d'Honneur was awarded to M. CROUX for fruit and fruit trees. Prizes of Honour were also awarded by the jury to SOLOMON & SON for Grapes, to M. PINON for Chrysanthemums, to Mme. CALVAT for Chrysanthemums, to M. BILLARD for Begonias, to M. RIBET for fruit, to M. PAUL LABBÉ for cut flowers of Chrysanthemums, to the ECOLE HORTICOLE DE PLESSIS-PIQUET for Chrysanthemums, and to M. NOMBLOT-BRUNEAU for fruit and fruit trees. In some of the classes there was a large number of entries, and the exhibitors were rewarded with works of art, Gold, Silver-gilt, Silver and Bronze Medals of the National Horticultural Society of France, money prizes being quite unknown at such shows on the Continent.

SCOTTISH HORTICULTURAL.

NOVEMBER 1.—The monthly meeting of this association was held in the Goolld Hall, 5, St. Andrew Square, Edinburgh, on this date. Mr. Whytock, the president, was in the chair, and there was an attendance of 110 members.

Mr. George P. Berry, lecturer in horticulture at the Edinburgh and East of Scotland College of Agriculture, gave a lecture on "The Working and Management of Garden Soils." Mr. Berry pointed out that the surface layer was the most fertile one, and maintained that, while it was sound practice to dig at least two spades deep, it was mistaken policy to bring the sub-soil to the surface. Whether the working be two or more spits deep, each spit should be left in its original position. By turning the top spit into the bottom of the trench the bacteria, which were nearly all present

in this, were suffocated, and the soil brought to the surface was, for the time being, practically sterile. The principal advantages of deep working were free admission of air to a greater depth (thus increasing the depth of the fertile layer), and allowing a free ascent of moisture to the surface in dry weather in summer. Speaking of surface working, he advocated the free use of both the hoe and rake during the growing season, thereby assisting in the free admission of air, the conservation of moisture, and in checking sudden falls in temperature through evaporation from the surface. Drainage was also dealt with, and the necessity for frequent applications of lime in small quantities in order to keep the soil in a healthy state.

Fifteen new members were elected.

The lecture for the meeting on December 6 will be delivered by Mr. M. Todd, Edinburgh, the subject being "The Scottish Horticultural Association: A Retrospect."

CARDIFF CHRYSANTHEMUM.

NOVEMBER 2, 3.—The 24th annual exhibition held in connection with this society took place in the Park Hall, Cardiff, on the foregoing dates.

Mr. GEO. DRAKE, Nurseryman, Cardiff, exhibited eight vases of specimen Japanese blooms (each vase containing three blooms of one variety), for which he was awarded a 1st prize and a challenge cup offered by the society. The blooms were exceptionally fine examples, and one of the Lady Talbot variety received the N.C.S. award offered for the best bloom in the show. In addition to this, the collection contained excellent blooms of Walter Jinks, F. S. Vallis, Hon. Mrs. Lopes, Reginald Vallis, and Lady Letchworth. Mrs. F. S. WILLIAMS, Bryn Glas, Newport (gr. Mr. J. Duff), was a close 2nd, having among other varieties, good blooms of F. S. Vallis, President Viger, Miss H. Rowley, and Lady Talbot. 3rd, The Marquis of BUTE, Cardiff (gr. Mr. H. Farmer, Lord NINIAN STUART, Falkland, N.B. (gr. Mr. W. Young), received an extra prize.

Mr. DRAKE was also placed 1st for 12 blooms of Japanese varieties, distinct. Notable varieties in his exhibit were Hon. Mrs. Lopes, Leslie Morrison, Rose Pockett, and Reginald Vallis. 2nd, Mrs. A. JOY, Court-y-rala, near Cardiff. 3rd, L. E. TREHARNE, Esq., Coedriglan, near Cardiff (gr. Mr. G. H. Brown).

The Marquis of BUTE won the 1st prize, together with a challenge cup, in the class for a stand of 24 Japanese blooms of not fewer than 18 varieties. Among these F. S. Vallis, A. T. Miller, Pockett's Crimson, Marquis of Northampton, and F. Payne were well represented. H. CORNELIUS, Esq., Weston (gr. Mr. Cook), won the 2nd prize in this class.

Mr. GEO. DRAKE secured the premier award, which included a challenge cup, in the class for 24 incurved blooms of not fewer than 12 varieties. Godfrey's Eclipse, Lady Isabel, Pantia Ralli, and Boccace were some of his best blooms. The Marquis of BUTE was placed 2nd, and the Exors. of the late Prince HATZFELDT, Chippenham (gr. Mr. F. Bible), 3rd. In the premier collection some of the most striking blooms were Buttercup, Duchess of Fife, Frank Trestant, and Lady Isabel.

The Marquis of BUTE also won the 1st prize for a stand of 12 incurved blooms in not fewer than six varieties. As this exhibit was the best in two classes it was awarded the National Chrysanthemum Society's Silver Medal. The varieties shown were Buttercup, Duchess of Fife, Mrs. G. Denyer, Clara Wells, Topaz Orientale, and H. W. Thorp. The same competitor won the leading prize and a silver challenge bowl for a stand containing blooms of 12 Japanese and 12 Incurved Chrysanthemums, each of a distinct variety. Among the best of the Japanese sorts were F. S. Vallis, W. A. Etherington, Hon. Mrs. Lopes, Maud Jefferies, and F. Payne, while Romance, Duchess of Fife, Miss Thiedfall, and Buttercup were conspicuous among the incurved flowers. 2nd, Prince HATZFELDT (gr. Mr. F. Bible).

Messrs. S. WILLIAMS & SONS, Nurserymen, Cardiff, secured the 1st prize, including a challenge cup, in the class for a group of single and large flowering Chrysanthemums arranged with foliage plants in a space of 60 square feet. Mr. W. TRESEDER, Nurseryman, Cardiff, was placed 2nd. In addition to these, there was a very fair display of groups in other classes, the

majority of these being arranged by amateurs and cottagers.

At the luncheon one of the judges referred to the appearance of these groups, suggesting that exhibitors should arrange them less formally.

Fruit was fairly well represented in the 14 classes provided by the schedule. Sir J. GUNN, St. Melons, near Cardiff (gr. Mr. Dobbs), won the 1st prize and a challenge cup for a collection of six bunches of Grapes in not fewer than two varieties. The same exhibitor was equally successful in winning the 1st prize and a challenge cup for a collection of hardy fruits.

TRADE EXHIBITS.

Mr. J. BASHAM, Bassaleg, near Newport, showed a splendid collection of hardy fruits as at former shows, being awarded a Gold Medal.

Mr. W. TRESEDER was also awarded a Gold Medal for a collection of Dahlias. A similar award was made to Messrs. J. CYPHER & SONS, Cheltenham, for a collection of Orchids. Messrs. CLIBRANS, Altrincham, showed a miscellaneous collection of Chrysanthemums and other flowers. (Silver Medal.)

SOUTHEND-ON-SEA HORTICULTURAL.

NOVEMBER 2, 3.—This Society held its annual autumn exhibition of Chrysanthemums, fruits, and vegetables in the Marlborough Hall on the above-mentioned dates. The attendance of the public on both days was satisfactory, as also was the number and quality of the exhibits. Five excellent groups of Chrysanthemums in pots were arranged in competition for the challenge cup presented by J. Tabor, Esq., The Lawn, Rochford. It was won by that gentleman's gardener, Mr. J. BURLS, with a group consisting of well-grown plants of popular varieties surmounted with flowers of uniform size. 2nd, Mr. BOOSEY, Nurseryman, Rochford. Mr. A. REEVES, Queen's Hotel, Westcliff-on-Sea, was a close 3rd. In the corresponding class for a group of miscellaneous plants arranged for effect, Mr. J. BURLS was again successful with a capital exhibit consisting of brightly-coloured Codæums, Abutilons, Salvia splendens, profusely-flowered plants of Begonia Agatha, Carnations, Bouvardia, &c.; 2nd Mrs. MILLAR, Leigh House, Leigh-on-Sea (gr. Mr. A. Epps); and the Rev. R. STUART KING, Leigh-on-Sea, was 3rd.

CUT BLOOMS. In the open class for 24 blooms (Japanese), distinct varieties, Mr. J. BURLS was placed 1st, staging grand blooms of Mr. F. S. Vallis, Reginald Vallis, Mrs. W. Knox, Mrs. A. T. Miller, Mary Mason, Bessie Godfrey, Mrs. R. Hooper Pearson, Miss G. Moore and (among other good varieties) a grand bloom of Lady Talbot, of great depth and diameter and which was awarded the silver medal presented by Dr. G. F. Jones, J.P., for the best Japanese bloom in the show. Mr. A. EPPS was a fair 2nd. In the class for 12 Japanese blooms distinct, Mr. F. E. BELCHER, Stanford-le-Hope, was a good 1st, staging, among others, fine blooms of Mrs. A. T. Miller, F. Penfold, Lady Talbot, W. A. Church, A. Byron, Henry Parkins, Mme. Paolo Radaelli, and Guy Paget; Mr. P. E. WISEMAN, Maldon, was a close 2nd. The best exhibit of six blooms of Japanese varieties was shown by Mr. F. E. BELCHER, Mr. BURLS being placed 2nd and Mr. WISEMAN 3rd, all showing well. In the class for 12 incurved varieties Mr. P. E. WISEMAN was a good 1st. Mr. BELCHER was 1st in the class for six blooms of one variety of a Japanese Chrysanthemum, showing blooms of Guy Paget of great substance; Mr. A. DAVEY was 2nd, and Mr. J. BURLS 3rd. In the class for six vases of Japanese blooms, distinct varieties, three blooms in each vase, there were only two entries. Mr. BURLS was placed 1st, thus winning the silver medal offered, and Mr. A. EPPS 2nd.

In the amateur classes (open) Messrs. CAMPION and W. THURLEY were the most successful exhibitors, the former taking five 1st and the latter five 1st and seven 2nd prizes. In the class provided for nurserymen and florists residing within a radius of 10 miles of Southend Post office for one wreath, one cross, one bouquet, and one lady's spray and three buttonholes displayed on a table 6 feet by 3 feet, the 1st prize was won easily by Mr. PILGRIM, Leigh Road, Southend; Miss MILES, Hamlet Court Road, Westcliff-on-Sea, was 2nd. Mr. H. BLAKELEY, Evan's Farm, Rochford, was placed 1st for table decoration,

with a light arrangement of pink thread-like Chrysanthemums in glass vases of different sizes and Asparagus tenuissimus.

FRUIT CLASSES.—There were four entries in the class for two bunches of Black Grapes. Alderman INGRAM, Westcliff-on-Sea, was placed 1st for an excellent exhibit having medium-sized bunches of Gros Colman, consisting of large, even, and beautifully-coloured berries carrying a fine bloom; 2nd, Mr. BOOSEY. Apples and Pears were shown fairly well. Mr. A. EPPS was 1st for six dishes of dessert Apples, showing good fruits of Cockle's Pippin, Cox's Orange Pippin, Adam's Pearmain, Ribston Pippin, Lord Lennox, and Ellerton Pippin; Mr. H. B. HERBERT, Eastwood, Rochford, was a good 2nd. Mr. LANGSTON, Barling, was a good 1st in the corresponding class for six dishes of culinary Apples. Mr. W. A. VOSS, Rayleigh, won the 1st prize easily in the class for three dishes of dessert Apples.

NATIONAL CHRYSANTHEMUM.

TRIAL OF SINGLE CHRYSANTHEMUMS.

NOVEMBER 12.—A trial of single varieties of Chrysanthemums, under the auspices of the National Chrysanthemum Society has been conducted during the past season at Messrs. H. J. Jones, Ltd.'s nursery, Keston, Kent. About 250 varieties were received from various sources.

On Saturday, 12th inst., members of the Floral Committee journeyed to Keston to inspect the varieties.

The Committee, under the chairmanship of Mr. D. B. Crane, drew up a list of synonymous varieties and judged the best varieties in their respective colours.

Instead of certificates, three crosses were given for those of the greatest merit.

Mrs. Buckingham, a fine pink variety, which received a First-class Certificate last year, was approved.

The following were selected for the distinction of receiving three marks:—Narcissus, deep yellow (Robert Milner was equally good, but the two varieties were considered to be too much alike); Sir G. Bullough, a later variety, was good. Of white varieties, Meusa was very fine, with large flowers; Mrs. J. Carlile is also of fine form, but smaller; Mrs. Buckingham is a pretty pink sort, with a salmon shade; other pink varieties gaining the three marks were Florrie King, Pictor (pale shade), Pink Edith Pagram, Silver Slade, Lady Blanch Conyngham (bronze), Pyrethrum (bright chestnut red), Lillian Collett, Adelaide (white base, shading to mauve), J. B. Lowe (fine crimson), Swinburne (pale blush), and Sandown Radiance (bright chestnut-red). Other good varieties, but which failed to gain the maximum number of marks, were: Peter Pan, Maggie McLeod, Bronze Pagram, F. A. Collett, Lyra, Winnie Wells (this is a pretty dwarf flowered yellow variety), Netta (pink), and Gaiety (a pretty bronze semi-double variety).

The plants were grown in pots, and were mostly of neat, compact habit, with good foliage. All those enumerated may be recommended for pot culture. A. H.

ROYAL HORTICULTURAL SOCIETY OF ABERDEEN.

ANNUAL MEETING.

THE annual meeting of the members of this society was held in the Music Hall Buildings, Aberdeen. There was a large attendance, and Mr. J. G. Burnett, of Powis, chairman of directors, occupied the chair. Mr. J. B. Renmet, advocate, Aberdeen, secretary of the society, submitted the annual report and accounts. In moving their adoption, the Chairman said they might be considered to be very satisfactory. Their annual show was a particularly good one, and, as the report stated, was one of the best ever held under the auspices of the society. They began the year with debt, but now they were possessed of a small credit balance.

The Chairman having expressed his desire to retire, Mr. Gill was unanimously elected to the vacancy.

Ex-Councillor Milne was elected vice chairman; Messrs. W. Reid and W. Wyllie were re-elected auditors; while Mr. J. B. Renmet was re-elected secretary and treasurer. Twenty directors were also elected.

CHELTENHAM ROOT, FRUIT, AND CHRYSANTHEMUM.

NOVEMBER 2, 3.—The 40th annual show of this association was held in the Town Hall, Cheltenham, on these dates. The Chrysanthemums were exceptionally fine, for although the specimen plants were not so numerous, the quality was excellent. Cyclamens were well represented, winter-flowering Begonias made an artistic table, Primulas were fair, and Salvias were very effective.

The silver cup presented by the Mayor and Corporation of Cheltenham for six distinct varieties of Japanese Chrysanthemums, was won for the second time by Mr. G. J. MAYO, Cheltenham.

Major SILWYN PAYNE won the cup offered by Mr. H. N. Simmons for the best dish of dessert Apples shown by an exhibitor living within six miles of Cheltenham.

The special prize given by Ald. W. N. Skellicome for the best specimen Chrysanthemum plant in the show was won by Mr. G. J. MAYO with a beautiful example of Nellie Pockett.

Mr. H. O. LORD, Col. FAIRFAX RHODES, Mr. G. J. RESTALL, Mr. H. J. TILLEY, Mr. H. T. YOUNG, and Mrs. GREAVES (table decorations) were 1st prize winners in the classes for Chrysanthemums; Messrs. H. ANDREWS and E. T. LEIGHTON showed best in the Carnation classes; whilst Mr. H. ANDREWS, Mrs. RATCLIFFE, Mr. J. HORLICK and Mrs. ROBINSON were prominent exhibitors of other kinds of plants.

Certificates of the National Chrysanthemum Society were awarded to Mr. G. MAYO for a choice specimen of Nellie Pockett, and J. R. TOOLEY, Esq. (gr. Mr. H. Andrews), for 36 blooms of Japanese varieties.

There was a magnificent display of fruit; the chief prizewinners were Messrs. W. S. R. COX, ROSS; E. W. CADDICK, H. NEWMAN, Hetherly, A. H. TAYLOR, J. BOLT, Major SILWYN PAYNE, J. HITCH & SONS, Mr. C. M. FLETCHER, and Mrs. ROBINSON.

TORQUAY AND DISTRICT GARDENERS.

NOVEMBER 3.—The annual Chrysanthemum show, under the auspices of this association, was held in the Bath Saloons, Torquay, on this date, and proved a very successful exhibition, competition being extremely keen, especially in the cut bloom classes, while the groups of single and double Chrysanthemums were especially bright and meritorious. The table decorations, of which there were several, were light and graceful in design. The class for epergues of cut Chrysanthemums, arranged with autumn foliage and berries, brought out some exceedingly artistic exhibits, the 1st prize basket being a marvel of bright and graceful arrangement. Among the honorary exhibitors were Mr. R. P. KITSON, who showed some fine specimens of Nerine Bowdenii; Mr. C. COLES, who exhibited the curious Hamanthus puniceus in berry, and Col. CARY, who staged a fine collection of winter-flowering Carnations. Mrs. J. LYON won, for the third time, the Silver Cup offered for the best group of single Chrysanthemums, with a superb collection of brightly-coloured and fresh flowers. The cup now becomes her absolute property. A very fine group of large-flowered Japanese Chrysanthemums was contributed by Mrs. RICHARDSON, and awarded a 1st prize. The large class for cut blooms was for 24 varieties of Japanese, the 1st prize being won by Dr. SKARDON, with an excellent stand of large, brightly-coloured flowers. Among the best varieties were the brilliant yellow A. Davis, Lady Talbot (of immense size), Elsie Fulton, and J. H. Silsbury. The 1st prize exhibit of twelve incurved Japanese Chrysanthemums, shown by Mrs. LYON, was especially good. The special prize for six vases of cut Chrysanthemums was won by Mrs. LYON. Considerable interest attached to the competition between artisans and cottagers, and in this section some very creditable exhibits were staged. Attractive as were the flowers and plants shown in the competitive classes, the display afforded by the nurserymen's exhibits contributed greatly to the success of the show. THE DEVON ROSERY, Torquay, had a very excellent stand, containing Lapagerias, Tuberoses, Palms, with the new Phonix Roebelini, Lilium Harrisii, Cypripediums, Salvia splendens, Ericas, Solanum capsicastrum, Ceanothus Gloire de Versailles, Orange trees and Hydrangeas. Messrs. ROBERT VEITCH & SON, Exeter, showed Nerine Bowdenii, N. Fothergillii

major, N. flexuosa alba, the brilliant, scarlet-flowered Alberta magna (which has been tried in the open in the south-west, but has not succeeded), Kadsura japonica (new, with red foliage and small white flowers, a fine collection of winter-flowering Carnations, including Rose Doré, Mikado, Lady Audley Neeld, Fair Maid, Carola, Aristocrat, Victory, Vinca, Afterglow, May Day and Beacon (Grevillea sulphurea, G. Preissii, G. alpina, Cryptomeria elegans (with bronzed foliage), Thibaudia acuminata, Chrysanthemums and Apples. Mr. W. B. SMALE, Torquay, had a new Abutilon named Devonshire Cream, also Dracena de Grootii (with variegated foliage), Acalypha hispida, Anthuriums, Antholyzas, Cyclamen, Chinese Primulas, and a new strain of Primula obconica. The DEVON FRUIT FARM staged a splendid collection of 74 varieties of Apples. Messrs. BURRIDGE & SONS, Paignton, showed some superb plants of Chrysanthemums, Codiaums (Crotons), finely-coloured Dracaenas, and a varied assortment of Ericas. Mr. HEATH, Kingskerswell, whose beautiful Violets were always so admired by the public at this show, was an absentee, as he has started fruit growing in British Columbia.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

NOVEMBER 3.—Committee: Messrs. E. Ashworth (Chairman), R. Ashworth, Arthur Ashton, Bolton, Holmes, Keeling, Parker, Sander, Thorp, Ward and Weathers (hon. sec.).

G. SHORLAND BALL, Esq., Burton, Westmoreland (gr. Mr. Herdman), exhibited a good collection of plants, in which were some very good Cypripediums, C. × Earl of Tankerville, C. insigne var. Sandera, C. × Hitchense in variety, and a choice plant of Lycaste Skinneri var. alba (Silver-gilt Medal).

Col. J. RUTHERFORD, Blackburn (gr. Mr. Lupton), a competitor for the "R. Ashworth" Cup, staged a group of Cypripediums.

W. R. LEE, Esq., Heywood (gr. Mr. Woodhouse), made a fine display of bright and rare plants. Award of Merit were granted to Odontoglossum × Ashworth var. Fine King, Cattleya × Cooksonii var. Queen Amelia, C. × Princess Royal and C. labiate var. Leana.

H. J. BROMLOW, Esq., Rainhill (gr. Mr. Morgan), received an Award of Merit for Cypripedium × Reginald Young.

J. J. HOLDEN, Esq., Southport (gr. Mr. Johnson), exhibited two forms of Cattleya × Fabia; one named C. × Fabia var. splendens received an Award of Merit.

Z. A. WARD, Esq., Northenden (gr. Mr. Weatherly), was awarded a Silver Medal for a splendidly-grown collection of Cypripediums, in which were many specimens of the yellow forms of C. insigne.

R. ASHWORTH, Esq., Newchurch (gr. Mr. Gilson), had the distinction of gaining the only First-class Certificate awarded at the meeting. It was granted to Odontoglossum crispum var. R. Ashworth, of which O. c. var. Graianum was one of the parents.

J. H. CRAVEN, Esq., Keighley (gr. Mr. Corney), staged a group of Ependium vitellinum var. autumnalis, which added brightness to the show, and for which a Silver Medal and Cultural Certificate was awarded. Cattleya × Fabia alba Craven's var. received an Award of Merit.

F. A. HINDLEY, Esq., Great Horton, Bradford (gr. Mr. Fox), was awarded a Silver Medal for a mixed group of Orchids.

Mr. A. A. McBEAN, Cooksbridge, exhibited the rare and distinct Odontoglossum crispum var. Solum.

Messrs. KEELING & SONS, Bradford, staged, amongst other things, a fine plant of Cattleya labiate var. King George V. The plant received an Award of Merit.

O. O. WRIGLEY, Esq., Bury (gr. Mr. Rogers), staged a good group of Cypripediums, in which was noted the pretty C. × Boltonii.

Mr. H. A. INNES, Croft Spa, Yorks., was awarded a Silver Medal for a display of miscellaneous Orchids, including many Cattleyas and Cypripediums.

W. THOMPSON, Esq., Stone (gr. Mr. Stevens), exhibited Odontoglossum × exultans var. Minerva, and Cypripedium × Ed. Guest.

A. HANMER, Esq., Marple, exhibited a peculiar form of Cypripedium × Hitchense.

Mr. P. WEATHERS, Manchester, received an Award of Merit for Cattleya Bowringiana var. concolor. Other exhibitors were THE LIVERPOOL ORCHID & NURSERY CO.; MESSRS. MANSELL & HATCHER, Rawdon; Mr. W. SHACKLETON, Bradford; and Mr. J. BIRCHENALL, Alderley Edge.

COVENTRY CHRYSANTHEMUM.

NOVEMBER 3, 4, 5.—The sixteenth annual exhibition of the Coventry and District Chrysanthemum and Floricultural Society was held on these dates. The quality of the exhibits was of a very high standard throughout, and in point of view of the number of entries the show was a success. The Mayor presided and Colonel Wyley performed the opening ceremony. Honorary exhibits were staged by Messrs. CLIBRANS, Altrincham; the EXECUTORS of Thomas Webb, Esq., Coventry; MESSRS. KIMBERLEY & SON, Kenilworth; Mr. PARSONS, Worcester; MESSRS. HEWITT & CO., Solihull; and others. In the open class, Division A, 1st prizes for plants were gained by Messrs. W. FINCH, R. H. BRADNICK, HUGH ROTHERHAM, F. TWIST, and Captain STARKEY, whilst 2nd prizes were won by Mrs. W. I. ILIFFE, Messrs. HUGH ROTHERHAM, W. FINCH, and F. FOSTER. In the classes for cut blooms, Miss MELODEW won three 1st prizes, the other premier awards being secured by the Countess of CRAVEN and Mr. R. H. BRADNICK; the 2nd prizes were awarded to the Countess of CRAVEN, Mr. W. FINCH, Miss MELODEW, and Mr. J. RAVEN. In the miscellaneous section of this division, the Countess of CRAVEN, Captain STARKEY, Messrs. FOSTER, and H. MITCHELL were successful exhibitors. Messrs. F. E. FOSTER, L. LISTER KAYE, and H. MITCHELL showed successfully in Division B, open to gentlemen not employing more than two gardeners regularly and residing within a radius of 12 miles of Coventry. The amateurs and cottagers gaining awards were Messrs. W. BIRKETT and A. H. MOORE. In the open classes for vegetables, Captain STARKEY, Messrs. H. MITCHELL, E. FORD, and J. KNIGHT won 1st prizes, whilst others who showed well were Messrs. H. MITCHELL, J. KNIGHT, T. NICHOLLS, C. V. PUGH, Captain STARKEY, and Mr. E. FORD. A gold medal was offered for a group of foliage and flowering plants, and this was won by HUGH ROTHERHAM, Esq. (gr. Mr. G. Griffin). The medal for the best bloom in Division B went to Mr. L. LISTER KAYE (gr. Mr. Watson). A medal was awarded to Mr. A. H. MOORE, as the winner of the greatest number of points in the amateur classes.

RAYLEIGH AND DISTRICT HORTICULTURAL.

NOVEMBER 4, 5.—The Rayleigh and District Horticultural Society held its second autumn exhibition of flowers, fruit, and vegetables in the Council School, Rayleigh, on these dates. The most noticeable features of the show were the non-competitive exhibits of fruit, &c., staged by Mr. W. A. VOSS, Eastwood Road, Rayleigh; Mr. T. H. WEBSTER, nurseryman, Stock; Mr. S. TAYLOR, Alpha Nursery, Rayleigh; and others. The most prominent of these exhibits was exhibited by Mr. VOSS and consisted of 13 varieties of Apples, two of Pears, and one fine dish of Quinces. These were shown to the best advantage in shallow, oblong market baskets, each containing from 12 to 24 perfect fruits of the respective varieties. The varieties consisted of (dessert) Duke of Devonshire, Scarlet Pearmain, Worcester Pearmain, Borsdorfer (Garret Pippin), and Court Pendu Plat. (culinary). The Queen (grand examples and beautifully coloured), Annie Elizabeth, Warner's King, Lord Grosvenor, Lord Derby, New Hawthornden, Mère de Ménage, and Emperor Alexander; Pears, Doyenne Boussoch (of great size and fine colour), and Aston Town. In addition to a good exhibit of Apples and Pears of leading varieties, Mr. TAYLOR had an attractive exhibit of floral arrangements. Mr. EPPS, Leigh House, Leigh-on-Sea, was a successful exhibitor in the competitive classes. E. B. FRANCIS, Esq. (who offered several special prizes), contributed a basket of well-coloured Black Alicante Grapes, not for competition.

BURY ST. EDMUNDS AND WEST SUFFOLK CHRYSANTHEMUM, FRUIT AND VEGETABLE.

NOVEMBER 3, 4.—This society held its annual show in the Corn Exchange on these dates. Notwithstanding the unfavourable fruit season in East Anglia, the numerous classes were well filled with produce of excellent quality. The open classes for 36, 24 and 12 cut blooms of Chrysanthemums were all well filled with blooms of good quality, the most successful exhibitors being Sir CARL MYERS, Bart., and Lord HOWARD DE WALDEN. The decorative and members' classes showed an increase in exhibits, table decorations being a feature of the show; these were judged by ballot of the visitors. Some well-flowered Begonias and Cyclamen were shown from Saxham Hall Gardens, and some handsome Exotic Ferns, Calanthe Veitchii and Cattleya labiata from Cavenham Park Gardens; a collection of fruit from the latter place included fine bunches of Muscat of Alexandria Grapes. Some very fine Apples and Pears were shown from the gardens at Ampton Hall, Campea Ashe and Farnham Park. Vegetables were well shown from Cavenham Park, Livermere, and Farnham Park. In Messrs. Sutton and Sons' class for a collection, there were seven exhibits, all of excellent quality.

DERBY CHRYSANTHEMUM.

NOVEMBER 4, 5.—The show of the Derbyshire Gardeners' Chrysanthemum Association was held at the Drill Hall, Derby, on these dates. The entries were numerous and the quality of the exhibits equal to the average.

CUT BLOOMS.—In the class for 24 blooms of Japanese varieties there were six competitors. Sir W. BASS (gr. Mr. R. Nesbit) won the 1st prize; his stand consisted of Mr. F. S. Vallis, Reginald Vallis, Mr. R. H. B. Marsham, President Viger, Frances Jolliffe, W. Gee, White Queen, Mr. L. Thorn, J. W. Molyneux, Mrs. A. T. Miller, G. Hemmings, Hon. Mrs. Lopes, Mr. R. Luxford, Marquise Venosta, Dennis Kirby, Evangeline, and Lady Conyers; the bloom of J. W. Molyneux was of the most striking colour. Mr. A. CHANDLER, Rugby, followed closely, his specimen of F. S. Vallis being the largest bloom in the show; 3rd, Mr. J. WOOD, Alvaston. For 24 blooms of Incurved varieties four competed. Mr. NESBIT led with Romance, F. Tristian, H. W. Thorpe, Pantia Ralli, Marjorie Shields, Buttercup, Mrs. Hygate, W. J. Higgs, Lady Isabel, Boccace, Mme. Vrembley, Mrs. G. Denyer, Daisy Southern and Calypso; 2nd, Mr. A. CHANDLER; 3rd, Mr. WOOD. These exhibitors also won in the same order for six vases of Japanese varieties. There were six exhibits of decorated tables, Mrs. F. ORTON, Longford, being awarded the 1st prize, and Mrs. WARWICK the 2nd prize. The best group of Chrysanthemums was arranged by Mr. F. MEAKIN, Mr. C. T. CHADWICK being placed 2nd. In a smaller group class the 1st prize was won by Mr. C. S. BUCK. There was keen competition in the less important classes.

VEGETABLES.—There were 20 entries in the class for a collection of vegetables, the winner being Mr. H. C. SMITH, Alvaston.

NON-COMPETITIVE EXHIBITS.—These were a great feature of the show. Capt. W. DRURY LOWE, Locko Park (gr. Mr. F. Sherwin), staged a superb exhibit of Begonias, and the Rev. BUCKSTON (gr. Mr. Sharnbrook) a collection of Begonias, Orchids, Cyclamen and Chrysanthemums. Mr. COLEY, The Outwoods, Duffield, showed three fine seedling single Chrysanthemums, which attracted much attention; they were named respectively Elsie Robinson (a bright pink flower with a white eye), C. Knifton (white, flushed with orange), and J. H. Coley (waxy white).

WORTHING CHRYSANTHEMUM.

NOVEMBER 8, 9.—The annual exhibition took place on these dates in the St. James's Hall, which was quite inadequate for the arrangement of the large number of exhibits. Chrysanthemums surpassed the usual standard, whilst fruits and vegetables were of fine quality.

A Silver Challenge Cup, to be won three times in a season, or five in the aggregate, was offered for a group of Chrysanthemums. The class attracted four competitors, and the successful exhibitor was H. S. JOHNSON, Esq., Seldenville.

Worthing (gr. Mr. Geo. Best). Mr. G. PILGRIM, Worthing (gr. Mr. F. Green), was placed 2nd, and Mr. W. PARSONS 3rd.

In the cut bloom classes, for 12 Japanese varieties, distinct, Mr. HARRY WEST, Broadwater, was awarded the premier prize. This exhibit included choice blooms of Mrs. C. Penford, Mrs. A. T. Miller, Pockett's Crimson, Mrs. L. Thorn, and Master David. 2nd, H. S. JOHNSON, Esq.

The 1st prize for six Japanese, distinct, was won by Mr. W. PARSONS, Mr. H. S. JOHNSON being placed 2nd. The last-named exhibitor secured the premier award in the class for six incurved varieties, distinct.

Dr. ROUSE, Worthing, led in the class for six Japanese blooms of one variety with fine blooms of Mrs. W. Knox; 2nd, Mr. H. S. JOHNSON, with Mrs. Geo. Mileham.

Mr. H. S. JOHNSON excelled in the class for four vases of single Chrysanthemums, showing excellent blooms of Sandown Radiance, Eureka, Bronze Pagram, and Edith Pagram; 2nd Mr. W. P. PELLY, Worthing.

NON-COMPETITIVE EXHIBITS.—Amongst these was an especially fine display of cut blooms of Chrysanthemums, exhibited by Mr. H. W. THORP, Durrington, conspicuous varieties being Ethel Thorpe, Pockett's Crimson, Bessie Godfrey, Geo. Mileham '08, Mrs. J. W. Cole, Splendour, Evangeline, and Maritana, a new incurved variety of creamy-yellow colour. Mr. ROBERT PIPER, Worthing was the exhibitor of a group of Chrysanthemums; whilst the BARNHAM NURSERIES, LTD., Barnham, exhibited a display of fruit.

SOUTHAMPTON ROYAL HORTICULTURAL.

NOVEMBER 8, 9.—The annual autumn show was held in the Artillery Drill Hall on these dates. The exhibition was attended with success; the entries far exceeded those of recent years, whilst the quality of the exhibits was of a high standard.

Cut blooms of Chrysanthemums, Vegetables, Apples, and Grapes were the outstanding features of the show. Mr. Fudge, as usual, discharged the secretarial duties with ability.

CUT BLOOMS.

The principal class for Chrysanthemums was for 12 varieties of Japanese sorts, three of each, arranged in vases. Substantial prizes were offered, and the class brought six competitors, their collections making a bold display. The 1st prize was won by Captain F. G. DALGETY, Lockerley Hall, Romsey (gr. Mr. W. Baxter), for a meritorious display of such varieties as Lady Talbot, Mme. P. Radaelli, Mme. G. Rivoli, Master James, Purity, Reginald Vallis, the Hon. Mrs. Lopes, and F. S. Vallis. E. G. MOCATTA, Esq., Woburn Place, Addlestone (gr. Mr. T. Stevenson), was a close second. This exhibitor showed some remarkably fine blooms of Lady Talbot, F. S. Vallis, Valerie Greenham and Bessie Godfrey.

In the class for six blooms of any two white varieties of Japanese Chrysanthemums there was a keen competition, Mr. CHANDLER, Shirley Road, Southampton, was placed 1st, having the varieties Annie Nichol and Purity; 2nd, Major CHICHESTER, Embley Park, Romsey (gr. Mr. W. Hall), with fine examples of F. Payne and F. S. Vallis. Mr. CHANDLER was awarded the 1st prize for six Japanese blooms of any variety not white; Captain DALGETY followed with good examples.

Captain DALGETY excelled in the class for two dozen Japanese Chrysanthemums, in not fewer than 16 varieties, the blooms to be arranged on boards. E. G. MOCATTA, Esq., was 2nd, his blooms being close in point of merit to those in the premier exhibit. There were six displays in this class, all the blooms being of remarkably high quality.

Incurved varieties were numerous and good. In the class for 18 blooms, in not fewer than 12 varieties, there was a spirited competition. After much deliberation the judges awarded the premier place to MATTHEW HODGSON, Esq., Moreton House, Kingsworthy (gr. Mr. Marsh), for large and coarse blooms, none too well finished. A. TATE, Esq., Downside, Leatherhead (gr. Mr. W. Mease), was placed 2nd, with much neater and fresher examples. Although a trifle smaller in size, a bloom of Clara Wells in this stand was

adjudged the premier Incurved Chrysanthemum in the show, whilst Lady Talbot in Mr. MOCATTA's 2nd prize exhibit in the vase class was selected as the premier Japanese bloom.

Single-flowered varieties are always shown well at Southampton, and this year proved no exception. For six vases of singles, distinct, disbudded, and unlimited in numbers, nine growers entered, making a fine display. Mr. MOCATTA secured the 1st award quite easily, with extremely fine blooms, well arranged, of Meusa (white), Pictor (soft pink), Bronze Pagram, Metta (red), Forbes (pink), and the richly-coloured Framfield Beauty. Mr. C. DYMOTT, Freemantle Nurseries, was a good 2nd. For the same number of varieties, not disbudded, nine entered. Mr. DYMOTT, with extremely freely-flowered bunches of Peter Pan, Mary Richardson, Laura Heaver, Lily Beer, Merstham Beauty, and Edith Pagram, was successful in winning the 1st prize; E. G. MOCATTA, Esq., being awarded the 2nd prize.

Chrysanthemums of the decorative type were well displayed. The schedule requires amending with regard to this class, as it reads thus: "Four vases of Chrysanthemums suitable for decoration, singles excluded," enabling the more astute exhibitor to include large Japanese blooms as was done on the present occasion, whilst all other exhibitors staged smaller varieties of a truly decorative character. The 1st prize-winner was Mr. CHANDLER, who showed Lady Talbot, O. H. Browhead, Alice Byron, and W. Gee; 2nd, Mr. DYMOTT, with attractive bunches of Market Red, Hortus Lolosanus, Mdlle. Dorey, and the Rev. W. Wright.

Plants were not numerous or good; three moderate groups of Chrysanthemums, intermixed with foliage plants, were arranged. Lord SWANWICK, South Stoneham House (gr. Mr. T. Hall), was placed 1st, and Mr. F. G. BEALING, Bassett Nurseries, 2nd. J. C. D. ESTERRE, Esq., Elmfield, Southampton (gr. Mr. C. Hosey), had the best specimens of four freely-flowered decorative varieties, as well as the finest six plants carrying not fewer than six blooms on each.

Table plants were shown finely, W. H. MYERS, Esq., Swanmore House, Bishop's Waltham (gr. Mr. Ellwood), was placed 1st of eight competitors. Grapes, Apples, and Vegetables were all well shown. Major CHICHESTER won the chief prizes for Grapes; Mr. MOCATTA for dessert Apples; Mr. MYERS for vegetables, the last-named excelling in Messrs. Toogood's and Messrs. Sutton's classes for six varieties of vegetables.

There were several non-competitive displays. The BRITISH COLUMBIAN FRUIT CO. had an imposing exhibit of Apples in three dozen varieties and an interesting display of bottled fruit. Messrs. OAKLEY & WATLING and Mr. WILKS exhibited floral devices. Mr. B. LADHAMS showed Alpines and other hardy plants. Mr. E. HILLIER, Winchester Nurseries, had a fine array of Apples.

WESTON-SUPER-MARE AND DISTRICT CHRYSANTHEMUM.

NOVEMBER 10.—The 24th exhibition was held on this date in the Knightstone Pavilion. The number of entries was about the same as last year. There were three classes for groups of Chrysanthemums; in the largest one, the 1st prize was awarded to H. CORNELIUS, Esq. (gr. Mr. C. Cook), and the 2nd to F. DOVE, Esq. (gr. Mr. G. Henley), both local exhibitors. Mr. C. J. ELLIS won the 1st prize for a group of single Chrysanthemums arranged with foliage plants, being followed by Mrs. J. R. BRAMBLE (gr. Mr. C. Daffurn). Mr. ELLIS was also successful in the class for a group of miscellaneous plants arranged for effect. There was a keen competition in the cut-bloom classes. Mr. CORNELIUS had the best exhibit of 24 Japanese Chrysanthemums in 18 varieties, showing especially good blooms of Hon. Mrs. Lopes, Rose Pockett and Splendour; 2nd, Mr. W. IGGULDEN, Frome. The best exhibit of 12 Japanese blooms was shown by Mr. J. W. SPINNER, Worle, whilst for six Japanese blooms the 1st prize was awarded to Mr. DOVE. The best bloom in the cut-bloom classes was a specimen of Lady Talbot, shown by Mrs. J. R. BRAMBLE. The vase classes were exceptionally good, and displays by amateurs about the average for this exhibition. The decorative and other classes were well filled. There were many classes for fruit and vegetables, Apples being especially numerous.

LIVERPOOL HORTICULTURAL.

NOVEMBER 9, 10.—The autumn exhibition, which constituted the 31st show, was held for the first time in the Corn Exchange. The glass roof of the building admitted an abundance of light, but after dusk the electric light was too limited for the showing of the exhibits to advantage. The position is good for suiting the convenience of business men, but the interior lacks the charms of St. George's Hall. The entries, with the exception of hardy fruits, were well up to the average, and the quality throughout was satisfactory. A considerable falling off is noticed in respect to the large trained plants, a smaller type of plants taking their place.

CHRYSANTHEMUMS IN POTS.—These were somewhat fewer than usual. A. EARLE, Esq. (gr. Mr. T. Hitchman), showed very successfully, securing the leading award in the following classes: (1) three large-flowering specimens (2) one large-flowering specimen (3) three trained plants (4) three staked plants, and (5) one staked plant. The three trained plants were charming examples.

JOSEPH SMITH, Esq. (gr. Mr. J. H. Kefford), was placed 1st in the class for a Pompon variety, with a well-bloomed specimen. W. J. LOCKETT, Esq. (gr. Mr. E. R. Finch), proved the winner in the class for six staked plants. Mr. J. H. KEFFORD excelled with plants of single varieties, with a bright combination of colours. W. CUNNINGHAM, Esq. (gr. Mr. W. Wilson), Mr. G. OSBORNE, and T. W. WRIGHT, Esq. (gr. Mr. T. Aitken), were winners of 2nd prizes in the plant classes.

CUT FLOWERS.—For 36 blooms, 18 incurved and the same number of Japanese sorts, in not fewer than 12 varieties, Sir W. H. TATE, Bart. (gr. Mr. G. Haigh), was adjudged the winner, with large, fresh blooms. Especially fine were (Japanese) Hon. Mrs. Lopes, Master James, Master Daniels, Lady Talbot, and Sir Frank Crisp; (Incurved) Buttercup, Romance, and Lady Isabel. The other prize-winners in this class were Lieut.-Col. J. B. GASKELL (gr. Mr. J. Stoney), Sir GILBERT GREENALL, Bart. (gr. Mr. C. Goves), and Mr. H. OSBORNE in this order.

Eighteen Incurveds.—Miss ROBINSON (gr. Mr. J. Nisbet) won the 1st prize with good blooms, including Romance, Buttercup, and Mrs. B. Hankey; 2nd, A. Cook, Esq. (gr. Mr. C. Osborne); and 3rd, T. HENSHAW, Esq. (gr. Mr. J. George). Mr. J. GEORGE excelled in the class for 18 Japanese Chrysanthemums, the blooms of F. T. Vallis and Master James being very noteworthy. Mr. G. HAIGH and C. GOVES, Esq., were placed 2nd and 3rd respectively.

Twelve Incurveds.—T. CLARKÉ, Esq. (gr. Mr. J. Clarke), led in this class with choice flowers, and the same exhibitor won the 1st prize for 12 Japanese blooms.

For six vases of singles C. J. PROCTER, Esq. (gr. Mr. J. Williams), led with excellent flowers in a very strong competition, whilst for three vases of singles Mr. L. THOMPSON was well ahead. In the smaller classes the 1st prize-winners were Messrs. E. WHARTON, J. TAYLOR, A. WALLACEY, W. AINDOW, and J. FINDLAY.

MISCELLANEOUS PLANTS.—J. FINDLAY, Esq. (gr. Mr. E. Wharton), showed the best four plants of Begonias in a strong competition. Mr. F. C. KEIGHTLEY showed the best three Ferns, and Mr. E. R. FINCH proved the 1st prize-winner in the class for one specimen Fern. Mr. J. GEORGE led in the class for three Orchids, and JAMES SMITH, Esq. (gr. Mr. D. Little), won the 1st prize for one Orchid with a plant of *Odontoglossum grande*, carrying 30 flowers. Mr. G. OSBORNE was placed 1st for two Palms, whilst for three Palms in 8-inch pots Mr. T. HITCHMAN proved the 1st prize winner.

In the other plant classes 1st prizes were won by Messrs. J. H. KEFFORD (Primulas); T. HITCHMAN (Cyclamen); E. R. FINCH (table plants); T. HITCHMAN (Poinsettias); T. HITCHMAN (Hyacinths); and J. GEORGE (Lily of the Valley).

FRUIT CLASSES.—In the class for a collection of six dishes W. L. GLADSTONE, Esq. (gr. Mr. T. Elsworthy), proved the 1st prize winner, staging Grapes Black Alicante and Golden Queen, Melon Sutton's Best of All, Apples and Pears.

Grapes.—The best two bunches of Black Alicante were shown by E. LORD, Esq. (gr. Mr. J. Wright); any other black Grape by Mrs. KENDALL (gr. Mr. R. Anderson) large bunches of Barbarossa; Muscat of Alexandria by Mr. J.

STONE; and any other white Grape by Mr. W. WILSON, who showed Golden Queen.

For six dishes of dessert Pears F. BIBBY, Esq., Shrewsbury (gr. Mr. J. Taylor), was placed 1st with fine fruits of Bauré Bâtet Pere, Doyenne du Comice, and others. Mr. J. LEE had the best single dish of Pears, the variety being Doyenne du Comice. Mr. J. LEE excelled for six dishes of dessert Apples, with Charles Ross, King of the Pippins, &c., one dish of a dessert variety, with Cox's Orange Pippin, six dishes of culinary Apples, and one dish of a cooking Apple.

The 1st prize-winner in the class for three dishes of dessert Apples was Mr. C. HACKLING, whilst Mr. J. CLARK showed the best four dishes of culinary Apples.

NON-COMPETITIVE EXHIBITS.

As usual at this exhibition trade growers exhibited important displays, and the following awards were made:

Gold Medals to Mr. J. LEE, Bebington, for a collection of Apples and Pears; Messrs. CLIBRANS, Altrincham, for Vegetables; Messrs. MANSELL & HATCHER, Rawdon, for a collection of Orchids; Mr. NORMAN DAVIS, Framfield, for Chrysanthemums; Messrs. W. WELLS & Co., Merstham, for Chrysanthemums; and Messrs. R. P. KER & Sons for Cyclamen.

Silver Medals to Mr. H. MIDDLEHURST for Chrysanthemums and Potatoes; Mr. W. ROWLANDS for Begonias and Palms; Messrs. THOS. DAVIES & Co. for Potatoes; Messrs. DICKSONS, Chester, for Chrysanthemums, Carnations and fruit; the LIVERPOOL ORCHID COMPANY, Gateacre, for Orchids; the GOVERNMENT OF BRITISH COLUMBIA for Apples.

GLOUCESTERSHIRE ROOT, FRUIT AND CHRYSANTHEMUM.

NOVEMBER 9.—The 47th annual exhibition was held at the Shire Hall, Gloucester, on this date. The competitive entries numbered 685, being about the same as last year, and in every respect the show was held to be equal to any previous one. The excellence of the fruit classes exceeded all previous exhibitions in connection with the society.

The chief prize winners in the Apple classes were, Mr. W. GORDON CANNING, Hartbury; Sir WILLIAM WEDDERBURN, Meredith; Mr. J. W. BENNETT; G. DAVIS, Barnwood; Sir WM. MARLING, Stroud; Mr. W. S. R. COX, Ashe Leigh; Mr. W. REED; Mr. MARTIN CHART, Hucclecote; E. PICKFORD & SON, Gloucester, and Mrs. KNOWLES, whilst successful exhibitors of Pears were Mr. W. GORDON CANNING, Sir WILLIAM MARLING, and Mr. G. DAVIS.

The feature of the Chrysanthemum exhibits was the number of new single varieties shown. Indeed, the majority of the flowers were singles of the market type, suitable for table decoration, as the society wish to encourage the development of the decorative sorts rather than the large exhibition varieties. The most charming variety exhibited was Mary Richardson, a single, of a beautiful soft orange-bronze shade of colour. Sir WILLIAM WEDDERBURN, Mr. W. GORDON CANNING, Sir HUBERT PARRY, and Mr. MEATH BAKER were the principal prize winners in the Chrysanthemum classes.

The championship cup offered by Mr. Henry Terrell, K.C., for the competitor gaining the highest number of points, was won by Mr. W. GORDON CANNING, of Hartbury House, who secured 46½ points, Mr. H. J. PHILIPS, Tibberton, being 2nd with 39, and Mr. H. DENT BROCKLEHURST, Sudeley Castle, 3rd, with 36 points.

PUTNEY, WANDSWORTH, & DISTRICT CHRYSANTHEMUM.

NOVEMBER 10, 11.—The 33rd annual exhibition of this society was opened by Alderman A. D. Dawnay, the Mayor of Wandsworth, in the Wandsworth Public Baths, on the 10th inst. The entries were more numerous than usual, the competition in many classes being very keen. An outstanding feature of the show was the magnificent group of Chrysanthemums and foliage plants arranged by E. H. BROWN, Esq., Highwood, Roehampton (gr. Mr. R. Bradford), which won the silver cup presented by the tradesmen of Wandsworth. The 1st prize for

a miscellaneous group was won by J. D. CHARLINGTON, Esq., Gifford House, Roehampton (gr. Mr. J. Prentice), with a very tastefully-arranged group, in which Orchids predominated.

In the cut bloom classes, Mme. STUART, The Convent, Roehampton (gr. Mr. A. Smith), was well to the fore, being the winner in the classes for 24 and 12 Japanese blooms and for six white blooms shown on boards. The same exhibitor also won a silver cup presented by the Mayor for eight vases of Japanese blooms, each containing three blooms of one variety, this being a particularly fine exhibit.

Winter-flowering Begonias were well shown by M. S. NAPIER, Esq., Putney Heath (gr. Mr. S. Mynett), this being a very strongly-contested class. Two classes for collections of vegetables were well filled, the Dowager Countess of KINTORE (gr. Mr. D. Anderson), being the winner in one class, H. W. HOFFMANN, Esq. (gr. Mr. Dolley), winning the prize offered by Messrs. Jas. Veitch & Sons.

The fruit classes were not so well filled as usual. Mr. A. SMITH won the principal prizes for both kitchen and dessert Apples, and Mr. C. ALEXANDER for Pears. Grapes were shown well by Mr. W. GILL and Sir W. J. LANCASTER (gr. Mr. F. H. Goddard). Sir W. J. LANCASTER also obtained the 1st prize for table plants.

Amongst the non-competitive exhibits was a splendid group of foliage and flowering plants, including many choice Orchids, from Messrs. JAS. VEITCH & SONS, Chelsea. Mr. L. R. RUSSELL, of the Richmond Nursery, contributed a group of hardy ornamental foliage and berryed plants. Handsome floral designs were sent by Messrs. MAHOOD & SON, Waltham & Sons, and W. R. MANN, Putney, and Mr. R. NEAL, nurseryman, Wandsworth.

BURTON AND SHOBNALL CHRYSANTHEMUM.

NOVEMBER 12.—The annual show of this society was held in the Town Hall, Bradford, on this date. The Society has been in existence for 25 years, the President being Sir William Bass, Bart. The general effect of the show was excellent, and was much enhanced by several non-competitive exhibits. In the open class for 13 varieties of Japanese Chrysanthemums shown as cut blooms, the 1st prize was won by the President, Sir WILLIAM BASS (gr. Mr. R. Nesbit), Mr. JOSHUA WOOD being placed 2nd. Sir WILLIAM BASS also excelled in the class for 12 incurved blooms and for 12 Japanese blooms. Other successful exhibitors were J. R. MORRIS, Esq. (gr. Mr. J. Hazelhurst), R. B. WRAGG, Esq. (gr. Mr. G. F. Fear), Messrs. GEORGE GRETTON, E. CAUSER, J. METCALF, W. OLIVER, W. L. CLIFF, and S. GARRETT.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

NOVEMBER 14.—The usual monthly meeting of this society was held at the Royal Horticultural Hall, Vincent Square, Westminster, on the above date. Mr. C. H. CURTIS occupied the chair. Seven new members were elected, and one nominated. The death certificate of Mr. A. Miles was produced, and the amount standing to his credit, viz., £8 13s. 3d. was granted to his nominee. The sum of £66 5s. has been paid for sick claims since the last meeting.

DEVON AND EXETER GARDENERS'.

At the annual meeting, held recently, a report of the year's work was given by Mr. Charley, the secretary, while the treasurer, Mr. Mackay, was able to state that the association would begin the session of 1910-11 with a balance in hand of £8.

The President expressed the wish to retire from office, and, on the motion of Mr. Hopo, Trehawke Kekewich, Esq., of Peamore, was elected president for the ensuing year. Mr. Mackay was again chosen as treasurer and Mr. Charley as secretary; the committee also was re-elected.

The opening paper of the session was an entitled "Rockeries: How to Make Them and What to Grow on Them," by Mr. R. S. Seaborn, of Luscombe Castle Gardens, near Dawlish. Mr. J. Wilson, of Killerton Gardens, presided.

SCOTTISH HORTICULTURAL.

NOVEMBER 16, 17, 18.—The Chrysanthemum show of this association was held in the Waverley Market, Edinburgh, on these dates. Compared with last year's show, there was a falling off in the number of entries, but this was chiefly in the vegetable classes. The cut flower and decorative classes were practically equal to last year. The following table shows the comparative numbers for the two years.

	1909.	1910.
Cut flowers ...	166	162
Bouquets, &c. ...	112	104
Plants ...	194	79
Chrysanthemums ...	53	31
Fruit ...	106	84
V. getables ...	314	237
	855	697

There was thus a net deficiency of 158.

The quality of the exhibits was, however, excellent, and some of the large blooms were never, perhaps, shown better.

The non-competitive exhibits were not quite so large as usual, and, with the exception of Messrs. Dobbie & Co., the local nurserymen were not in evidence.

In the class for 15 vases of Japanese Chrysanthemums, in 15 varieties, 3 blooms in each vase, the City of Edinburgh Queen Victoria Memorial Prizes, presented by the Lord Provost, Magistrates and Town Council, there were four entries, and the 1st prize, including the City of Edinburgh Cup (to be won three times before it becomes the property of the competitor) and £12, was won by Messrs. BELL, Rossie, Forgandenny, (gr. Mr. D. Nicoll); Captain STIRLING, of Keir, Dunblane (gr. Mr. T. Lunt), was placed 2nd; the Dowager Countess of SEAFIELD, Cullen House, Banff (gr. Mr. A. Morton), 3rd; and Col. E. STEWART RICHARDSON, Ballathie, Stanley, Perth (gr. Mr. J. E. Davis), 4th. Mr. NICOLL's flowers, with the number of points awarded, were as follows:—

Name of variety shown.	Maximum points.	Points awarded.
Hon. Mrs. Lopes ...	12	10
Lady Conyers ...	12	8½
Mrs. L. Thorn ...	12	8½
Purity ...	12	10
Lady Talbot ...	12	9½
Mme. Paolo Radaelli ...	12	9
Bessie Godfrey ...	12	8
J. H. Silsbury ...	12	8½
Edith Jameson ...	12	10
Mme. G. Rivol ...	12	9½
Victoria and Albert ...	12	9
Mrs. C. Beckett ...	12	9
F. S. Vallis ...	12	9
Mrs. F. W. Vallis ...	12	10
Mrs. A. T. Miller ...	12	9½
	180	138

MESSRS. BELL were followed closely by Captain STIRLING, as the following table shows:—

Name of variety shown.	Maximum points.	Points awarded.
Bessie Godfrey ...	12	8½
R. Vallis ...	12	9½
F. S. Vallis ...	12	9½
White Queen ...	12	10½
Frances Jolliffe ...	12	8½
Mrs. F. W. Vallis ...	12	9
White Venosta ...	12	9
Edith Jameson ...	12	8½
Melchet Beauty ...	12	9½
Purity ...	12	9½
Mrs. L. Thorn ...	12	8
Superb ...	12	8½
Lady E. Letchworth ...	12	7½
E. J. Brooks ...	12	10½
Mrs. G. Mileham, 1908 ...	12	10½
	180	137

The Countess of SEAFIELD's varieties were: Mrs. Thorn, Mrs. A. T. Miller, Reginald Davis, Lady Conyers, Lady Talbot, White Queen, President Viger, Frances Jolliffe, Elsie Fulton, Wm. Beadle, Mrs. G. Mileham, Mme. G. Rivol, Master James, Edith Jameson, and Melchet Beauty, a total of 119½ points being awarded. Col. STEWART RICHARDSON scored 76½ points.

In the Scottish Cup class, which is confined to Scottish gardeners and amateurs, and for

which eight vases of Japanese Chrysanthemums in eight varieties, three blooms of each, have to be staged, the cup (which is held by the winner for one year) and £6 was won by Lord NINIAN CRICHTON STEWART, Falkland Palace, Fife (gr. Mr. Wm. Young). The varieties were as follows: Mrs. L. Thorn, Mrs. A. T. Miller, Lady Talbot, Master David, J. H. Silsbury, F. S. Vallis, Mme. Cadbury, and Hon. Mrs. Lopes, receiving 61 points out of a possible 96. The 2nd prize was awarded to the Right Hon. R. C. MUNRO FERGUSON, Raith, Kirkcaldy (gr. Mr. D. McLean), with 58½ points. The varieties were Mrs. L. Thorn, Reginald Vallis, Hon. Mrs. Lopes, Mrs. F. W. Vallis, Mrs. A. T. Miller, Lady Talbot, Mrs. G. Mileham, and Bessie Godfrey. A. R. BROWN, Esq., Summerhill, Shandon, was placed 3rd with 5½ points, his finest variety being Master David; 4th, Lady ARMITSTEAD, Castle Huntly, Longforgan, with 57 points, Melchet Beauty being the best example in the exhibit.

In the class for six vases of Japanese Chrysanthemums in six varieties, three blooms in each vase, the 1st prize of £4 was awarded to Wm. RAMSAY, Esq., Bowland House, Stow, Midlothian (gr. Mr. R. Honeyman), who showed Mme. Paolo Radaelli, Mme. G. Rivol, Algernon Davis, Mrs. G. Mileham, Hon. Mrs. Lopes, and Mrs. A. T. Miller, receiving 51½ points out of a possible 72, the best specimens being Hon. Mrs. Lopes, which gained 10½ points out of a maximum of 12. W. T. MACLELLAN, Esq., Auchanault, Helensburgh (gr. Mr. H. MacSkimming), was placed 2nd with 38 points, having Reginald Vallis, Mrs. A. T. Miller, Hon. Mrs. Lopes, Valerie Greenham, Olive Miller, and J. H. Silsbury; 3rd, H. E. GORDON, Esq., Aitkenhead, Cathcart (gr. Mr. John Boucher), with Lady Talbot, Reginald Vallis, J. H. Silsbury, Mrs. A. T. Miller, Mrs. G. Mileham, and Victoria and Albert, receiving 37½ points, the first-named variety receiving the highest number of points, namely, seven.

In the class for blooms shown on boards there were nine entries, the same as last year, although the number of flowers had been reduced from 24 to 12, and for which Mr. J. W. McHattie this year offered prizes amounting to £5. Messrs. BELL (gr. Mr. D. Nicoll) were placed 1st, the Dowager Countess of SEAFIELD (gr. Mr. A. Morton) 2nd, and Messrs. GEO. WILLIAMS & SONS, nurserymen, Cardiff, 3rd.

PLANTS.

For a group of six plants of Chrysanthemums, distinct (single and Pompon excluded), the 1st prize was won by Lady STEEL, Edinburgh (gr. Mr. W. Michie); 2nd, D. HINE, Esq., Colinton (gr. Mr. W. Pulman); 3rd, Mrs. SIMSON, Colinton (gr. Mr. Jas. Fraser); and for four plants of Japanese Chrysanthemums (distinct) by D. HINE, Esq.; 2nd, Lady STEEL; 3rd, Mrs. SIMSON, whilst the best two plants of Chrysanthemums (distinct) were staged by D. HINE, Esq.; 2nd, Lady STEEL; 3rd, Mrs. SIMSON. The best large-flowered Chrysanthemum was shown by D. HINE, Esq.; 2nd, Lady STEEL; 3rd, Mrs. SIMSON; and the best specimen of a single Chrysanthemum by Lady STEEL; 2nd, D. HINE, Esq.

There was a fairly good display in the class for a group of plants, the specimens consisting principally of specimen Palms, Dracenas, and Ferns. For six Dracenas the 1st prize was awarded to the Earl of HOME. The Hon. Mrs. BAILLIE HAMILTON, Duns (gr. Mr. G. Kerr), showed the best six plants of *Primula sinensis*. *Salvia splendens* was shown best by Colonel NISBET, Gilmerton (gr. Mr. R. W. Lannell), and *Cyclamen* by Mrs. BOASE, Dundee. There was a good display of Lily of the Valley and Roman Hyacinths, Lord STRATHEDEN and CAMPBELL and Major THORNBURN, Peebles (gr. Mr. J. McNeill) being the respective 1st prize winners; for eight decorative foliage plants Sir WILFRID LAWSON was placed 1st, followed by the Earl of HOME.

CUT BLOOMS (Open Classes).

In the class for two vases of Japanese Chrysanthemums, one variety, three blooms in each vase, the 1st prize was awarded to Colonel R. G. AITKEN, Cansdowne Park, Helensburgh (gr. Mr. Alex. Campbell); 2nd, Mr. DAVID NICOLL.

For four vases of Japanese Chrysanthemums, 12 distinct varieties, three blooms in each vase, the 1st prize was awarded to the Dowager

Countess of SEAFIELD, Cullen (gr. Mr. Alex. Morton); 2nd, Captain A. STIRLING; 3rd, Mr. DAVID NICOLL.

The best exhibit of four vases of Japanese Chrysanthemums in four varieties, three blooms in each vase, was shown by W. H. DOBIE, Esq., Dollarbeg, Dollar (gr. Mr. John Waldie); 2nd, JAMES SM, Esq., Newtyle (gr. Mr. James Sword).

For three vases of Chrysanthemums in three varieties arranged for quality and decorative effect, not more than 12 sprays in each vase, any foliage to be used, A. S. HENDERSON, Esq., Dundee (gr. Mr. Geo. Scott), was placed 1st; 2nd, Dr. SCOTT, Musselburgh (gr. Mr. Wm. Armstrong).

The medal offered for the best bloom in the show was awarded to A. STIRLING, Esq., Keir (gr. Mr. Thos. Lunt), for the variety White Queen.

SINGLE CHRYSANTHEMUMS.

There was a class for six vases of single Chrysanthemums in six varieties, the 1st prize, a gold medal, being won by the Earl of WEMYSS, Gosford (gr. Mr. W. Galloway); 2nd, Mr. JAMES BRUCE, Springfield Nursery, Davidson's Mains (Silver-gilt Medal).

The Earl of WEMYSS showed the best three vases of single Chrysanthemums in three varieties, staged for quality and decorative effect, with any foliage; 2nd, C. W. COWAN, Esq., Dalhousie Castle (gr. Mr. W. G. Pirie).

Two vases of winter-flowering Carnations, six flowers in each vase, were best shown by J. H. HOULDSWORTH, Esq., Hamilton (gr. Mr. A. McKinven).

A silver medal was offered for the best new Chrysanthemum not in commerce. It was won by W. WELLS & Co., Merstham, Surrey, for Harry E. Converse, a bronze, Japanese, Recurved variety; the 2nd prize, a bronze medal, was also won by Messrs. WELLS for William Turner, a pure-white, Japanese, Recurved variety.

AMATEUR CLASSES.

For four vases of Japanese Chrysanthemums, in not fewer than four varieties, three blooms in each vase, the 1st prize was awarded to Mrs. JAS. STEWART, Alloa; 2nd, Mr. JAS. JENKINS, Aberdeen.

Mr. R. JENNER, Stirling, excelled in the class for two vases of Japanese Chrysanthemums, six distinct varieties, three blooms in each vase; the 2nd prize being won by Mr. JAS. JENKINS.

FRUIT CLASSES.

For a collection of fruit, to consist of eight dishes in eight distinct kinds and not to include more than two dishes of Grapes, the 1st prize was awarded to the Earl of WEMYSS. He showed fine specimens of Apples, the dish of Gascoyne's Scarlet Seedling being notable. The dishes of Charles Ross, King of Tompkins' County and Emperor Alexander were also remarkable; of Pears this exhibitor showed Duchess d'Angoulême very well. The Grapes were also good, and it was a splendid collection of fruit generally; 2nd, Lord ELPHINSTONE.

GRAPES.—The Grape classes were poorly represented. C. W. COWAN, Esq., Dalhousie Castle, was placed 1st for four bunches of distinct varieties, with Lord ELPHINSTONE a good 2nd. For two bunches, one black and one white variety, C. W. COWAN, Esq., was again placed 1st. Lord ELPHINSTONE secured 1st place for two bunches of Lady Downe's, and also 1st for two bunches of any other variety of Grape.

APPLES.—A prize was offered for 18 varieties of Apples, grown in Scotland, six of each sort, ripe or unripe. There was a good competition, and the specimens staged were very creditable. The 1st prize was won by Colonel GORDON, Castle Douglas (gr. Mr. Jas. Duff), who showed fine, ripe fruits of Golden Spire, Gascoyne's Scarlet Seedling, Stirling Castle and others; 2nd, Mr. R. G. SINCLAIR, Drem, who showed a fine dish of Allington Pippin.

In an open class for 18 varieties of Apples, ripe or unripe, Mr. E. W. CARADOC, Ross, Herefordshire, was awarded the 1st prize. He showed remarkable specimens of Lord Derby and Mère de Ménage. 2nd, His Excellency The AMERICAN AMBASSADOR, West Park, Bedfordshire (gr. Mr. G. McKinley). For six varieties of Pears, the Earl of WEMYSS again secured the 1st prize.

In a class for three baskets of dessert Apples, in three varieties, 12 fruits in each basket, ripe

or unripe, open to market growers, the 1st prize was won by Mr. E. W. CARADOC, Ross, Herefordshire; 2nd, Mr. R. G. SINCLAIR.

VEGETABLES.

There was a very small entry in these classes, but the produce was again of a very high quality. In the principal class in this section, for a collection of vegetables only four exhibits were staged, and Lord LAUDERDALE, Thirlestade Castle, Lauder (gr. Mr. R. Stuart), was awarded the 1st prize. He staged fine examples of Sutton's Exhibition Brussels Sprouts, Lyon Leeks, and Ailsa Craig Onions; the 2nd prize was won by JAMES MOIR, Esq., Dollar (gr. Mr. D. McMichen), and the 3rd by The Earl of HOME.

A silver medal was offered to Edinburgh market-growers for the best 12 bunches of Leeks (14 to the bunch) as grown for market. Mr. WILLIAM DOUGLAS secured the prize with splendid produce grown from seed of his own saving and selecting. The 12 bunches weighed 274 lbs.

NON-COMPETITIVE EXHIBITS.

Messrs. DOBBIE & Co., Edinburgh, put up a large stand of select varieties of Chrysanthemums. They also staged about 60 varieties of Potatoes. (Silver-gilt Medal.)

His Grace the Duke of Buccleuch, Dalkeith Palace (gr. Mr. James Whytock), exhibited a large collection of fruit grown under ordinary culture in Dalkeith Palace Gardens. (Gold Medal.)

Messrs. W. WELLS & Co., Merstham, Surrey, exhibited a large stand of Chrysanthemums. The singles, Sylvia Slade, Altrincham Yellow, C. J. Ellis, Mensa, a very fine white variety, and Mrs. Chamberlain, being shown in splendid condition. (Gold Medal.)

Messrs. STORRIE & STORRIE, Glencorse, had one of their characteristic exhibits of fruit, Celosias and Streptocarpuses. (Silver-gilt Medal.)

Messrs. YOUNG & Co., Cheltenham, exhibited a table of Perpetual-flowering Carnations. (Gold Medal.)

Mr. H. N. ELLISON, West Bromwich, staged a collection of Ferns and Gerberas. (Silver-gilt Medal.)

Mr. W. POUPART, Twickenham, exhibited a table of bottled fruits. (Gold Medal.)

The GOVERNMENT OF BRITISH COLUMBIA put up a semi-circular exhibit of Apples shown as packed for export in boxes. (Gold Medal.)

Messrs. R. SANKEY & SON, Nottingham, exhibited their specialities in garden ware, including pots, pans and boxes. (Gold Medal.)

Mr. JAMES W. SCARLETT, Inveresk, showed Potatoes and other culinary produce as grown for market. (Silver Medal.)

Messrs. TILLIE, WHITE & Co., Edinburgh, exhibited a collection of vegetables. (Silver Medal.)

Messrs. JOHN FORBES, LTD., Hawick, had a small collection of winter-flowering Carnations, Begonias and other flowers. (Silver Medal.)

Messrs. WILLIAMS & SONS, Cardiff, staged an effective display of all sections of Chrysanthemums. (Silver-gilt Medal.)

Messrs. WM. BROWN & Co., Edinburgh, staged a collection of Canadian Apples, being shown in the original cases as exported. (Gold Medal.)

Mr. C. DICKSON, Blairgowrie, exhibited some Apples, examples of culture on Muir of Blair.

The PATENT SAFETY LADDER CO., Peterborough, put up specimens of their patent ladders and steps. (Bronze Medal.)

THE WEATHER.

THE WEATHER IN WEST HERTS.

Week ending November 16.

Another cold week.—Since the present month began there have occurred only two unseasonably warm days and but three warm nights. The nights, however, have been much more unseasonably cold than the days, and on five of them the exposed thermometer showed 10 or more degrees of frost. At 2 feet deep the ground is now 2° colder, and at 1 foot deep 4° colder, than is seasonable. Rain fell on five days to the total depth of about half an inch. Moderate quantities of rain water have again come through both percolation gauges on each day during the week. The sun shone on an average for 2 hours 21 minutes a day, which is 20 minutes a day longer than is usual in the second week in November. The winds were as a rule rather high, and in the windiest hour the mean velocity amounted to 20 miles—direction W. For the third week in succession there was a seasonable amount of moisture in the air at 3 p.m. E. M., Berkhamsted, November 16, 1910.

MARKETS.

COVENT GARDEN, November 16.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in one day.—E.M.]

Cut Flowers, &c.: Average Wholesale Prices.

s.d. s.d.	s.d. s.d.
Azalea, white, per dozen bunches	10 5 0
Bayardia, per doz. bunches	4 0 5 0
Camelias, per doz. blooms, best	1 0 1 6
Carnations, p. doz. blooms, best	2 0 3 0
— smaller, per doz. bunches	6 0 9 3
Chrysanthemums, per doz. bunches	6 0 10 0
— larger per doz. blooms	1 6 3 0
Gardenias, per dozen	1 6 2 0
Hyacinth, Rome, p. doz. bunches	9 0 12 0
Lapageria, white, per dozen	1 6 2 0
Lilium aurant. per bunch	1 6 2 6
— longit. ...	1 6 2 6
— lancifolium rubrum	1 6 2 0
— lancifolium album	1 6 2 0
Lily of the Valley, p. doz. bunches	3 0 12 0
— extra quality	12 3 18 0
Marguerites, per dozen bunches	1 6 2 0
White	1 6 2 0
Hardy foliage	3 0 5 0
— ivy leaves, per dozen bunches	2 0 2 6
— long trails, per bunch	1 0 1 6
— short green, per doz. bunches	1 0 2 0
Moss, per gross	3 0 4 0
Myrtle, dz. bels. (English), small-leaved	4 0 6 0
— French	1 0 1 6
Smilax, per dozen	3 0 4 0

Plants in Pots, &c.: Average Wholesale Prices.

s.d. s.d.	s.d. s.d.
Aralia Sieboldii, p. dozen	1 0 6 0
— larger specimens	9 0 12 0
— Moseri	6 0 8 0
— larger plants	12 0 18 0
Araucaria excelsa, per dozen	12 0 30 0
— large plants, each	3 6 5 0
Asparagus plumosus nanus, dz.	9 0 12 0
— Sprengeri	6 0 9 0
Aspidistras, p. dz., green	15 0 24 0
— variegated	24 0 36 0
Begonia (Cane de Lorraine), p. dz.	8 0 12 0
— Turnford Hall, white	12 0 24 0
Chrysanthemums in pots	9 0 12 0
— specials	18 0 24 0
Coccos Weddelliana, per dozen	18 0 30 0
Crotons, per dozen	12 0 18 0
Cyclamen, per doz.	9 0 12 0
Cyperus alternifolius, per doz.	5 0 6 0
— laxus, per doz.	4 0 5 0
Erica gracilis, p. dz.	9 0 12 0
— gracilis nivalis	9 0 12 0
— hyemalis	10 0 15 0
Euonymus, per dz., in pots	4 0 8 0
Ferns, in tubs, per 100	8 0 12 0
— in small and large 60's	12 0 20 0
— in 4's, per dz.	5 0 8 0
— chosen sort, per dozen	8 0 12 0
— in 32's, per dz.	10 0 18 0
Ficus elastica, per dozen	8 0 12 0
— repens, per dozen	4 0 6 0
Funkia variegata, per doz.	12 0 18 0
Grevilleas, per dozen	3 0 5 0
Isoetes, per dozen	3 0 4 0
Kentia Belmoreana, per dozen	15 0 21 0
— Fosteriana, per dozen	18 0 24 0
Latania borbonica, per dozen	15 0 18 0
Lilium longiflorum, per dz.	12 0 15 0
Marguerites, white, per dozen	6 0 8 0
— Selaginella, per dozen	4 0 6 0
Solanums, per dozen	8 0 10 0
— (white), per dozen	8 0 10 0

Fruit: Average Wholesale Prices.

s.d. s.d.	s.d. s.d.
Apples (American), per barrel:	
— Greenings	21 0 —
— Baldwin	22 0 —
— York Imperial	22 0 24 0
— Albemarle	23 0 30 0
— (Nova Scotian), per barrel:	
— Kings	20 0 —
— Wine Saps	10 0 12 0
— Ribston Pippin	20 0 —
— (Californian), Newtown Pippin, per case,	
4 tiers	8 6 10 0
— 4 tiers	6 6 8 0
Apples (Oregon), Newtown Pippin	12 6 15 6
— (English), Lord Derby, per bushel	5 0 6 0
— Warner's King	6 0 6 6
— Cox's, 4 bushel	6 0 12 0
— Bismarck, per bushel	5 0 —
— Lane's, per bushel	4 6 5 0
— Bramley's, per bushel	6 0 8 0
— Ribston Pippin, 1 bushel	4 0 4 6

Fruit: Average Wholesale Prices (continued).

s.d. s.d.	s.d. s.d.
Apples, Blenheim Pippin, per bushel	6 0 8 0
— King of the Pippins	8 6 4 6
— Fern's Pippin	4 6 5 6
— North's Pippin	4 0 —
— Greening	4 6 5 0
— Prince Albert	5 6 —
— Newton Wonder	5 0 6 0
Bananas, bunch:	
— Doubles	11 0 12 0
— No 1	9 0 —
— Extra	10 0 11 0
— Giant	13 0 —
— Red combed	4 0 5 6
— Red Doubles	8 0 9 0
— 1 lb. p. doz.	0 6 1 0
Blackberries, per case	11 6 —
Cranberries, 30 qts. per case	11 6 —
Dates (Tunis), per doz. Cans	4 9 5 0
Figs (Italian), boxes	0 8 1 0
Grape Fruit, case:	
— 60's	10 0 12 0
— 64's	10 0 12 0
— 34's	10 0 12 0
Grapes (English), per lb.	0 8 1 0
— Muscat of Alexandria	1 3 2 6
— Canon Hall Muscat	2 0 3 0
— Black Hambro	0 6 1 0
— Belgium	0 9 1 0
— Gros Commun	1 0 1 9
— Black Alicante (Guernsey)	0 5 0 7
— America, tinted, barrel	10 6 —
— Malaga 420	16 6 18 6
— Messina	16 0 20 0
— Moscat, Spanish	14 0 —
— Bronze 24	14 0 —
Medlars (English), 1 bushel	4 0 4 6
— French, per basket, 25 lbs.	4 0 5 0
Nuts, Almonds, p. bag	36 0 42 0
— Chestnuts (per 100)	22 0 24 0
— Brazil, per 100	10 0 16 0
— per peck	1 0 —
— per cwt.	48 0 —
— sorted	55 0 —
— Barcelona, bag	32 0 34 0
— Cocanats (100)	10 0 14 0
— English Walnuts, per doz.	7 0 8 0
— Doubles, per doz. lbs.	12 0 18 0
— (French), per nobles	8 6 11 6
— English Cuts	0 10 1 0
Oranges—	
— Jamaica	9 6 11 6
— Dania	10 6 15 6
— Gattucha	21 0 23 6
Peaches, autumn, per case:	
— Beurre Hardy	10 6 —
— Glen Morgan	11 6 12 0
— Winter Navel	11 6 12 6
— Easter Beurre	9 6 —
— Doyenné du Comice	15 0 —
— Bartlett	5 0 6 0
— Kent, case	6 9 7 0
— French, 100	3 0 3 6
— California	3 6 1 6
— Cabash	4 0 6 0
— (Dutch), stewing	
— Molles, per sieve	3 6 —
— per barrel	14 0 —
— Persimmon, box	1 6 2 0
— Peaches, 23 3 6	
— Pomegranates, per case	1 9 2 3
— Quinces, p. bag	6 0 —

Christmas Fruits and Preserves.

s.d. s.d.	s.d. s.d.
Figs, 1 lb. packets, per doz.	5 0 —
— boxes, per doz.	3 0 5 0
— Natural, per cat.	27 6 —
— Taps, per cat.	23 6 —
Nuts, Brazils, hand-picked, best, per cwt.	65 0 —
— Barcelona, hand-screened, per bag	37 6 —
— America, per bag	48 0 —
— (Ditza), p. bag	44 0 —
Nuts, Monkey, hand-picked, per lb.	22 6 —
Dates, per cwt.	9 9 —
— (Kadrowie)	11 3 —
— (Hallowe)	12 6 —
Melz Fruits, p. dz.:	
— 1 lb. boxes	3 9 —
— 1 lb. boxes	6 6 —
— 1 lb. boxes	10 0 —
Mixed Fruits, per dozen	8 3 —
Plums (Carlsbad), 1 lb. boxes, per dozen	9 0 —

Vegetables: Average Wholesale Prices.

s.d. s.d.	s.d. s.d.
Artichokes (Globe), per dozen	1 6 2 0
— ground chokes, 1 sieve	2 0 2 6
Aubergines, doz.	1 6 2 0
Asparagus, Paris Green	3 6 5 0
Beans, Broad (French), per pad	2 6 3 6
— per packet	0 4 0 6
— Jersey, per lb.	0 6 1 0
— per lb., 100	1 6 2 0
— cat. bags, tally	3 0 1 6
Carrots (English), per cwt.	2 6 2 0
— dirty	1 6 2 0
— (French), per dozen bunch	1 0 5 0
Cauliflowers, hand-picked (24 30)	2 0 3 0
Celery, per doz.	6 0 12 0
Chicory, per lb.	0 3 0 4
Corned Beans (Indian), per lb.	1 3 1 6
Cucumbers, p. flat	6 6 8 0
— (sweet), per doz.	0 6 0 9
Herbs (sweet), packets, per gross	7 0 —
Horseradish, 12 bunches	12 0 14 0
Lettuce (French), Cos, per dozen	1 6 2 0
Mint, p. doz. bches.	2 0 —
Mushrooms, p. lb.	0 8 1 3
Mushroom, broilers	0 8 10 10
— outdoor	3 0 —
Mustard and Cress, per dozen pun.	0 6 0 8
Onions, Dutch, bags	5 0 6 0
— Belgians, bags	5 0 6 0
— New Spanish, case	5 0 6 6
— (English) bag	5 6 6 6
— (Belgian), 100	0 2 0 3
— Pickling, sieve	2 0 2 6
Parsley, 1 sieve	1 6 2 6
Peas (French), per pad	4 6 5 0
— (English), per dozen lbs.	1 6 5 0
— small selected	4 0 4 6
— seconds	1 6 2 0
— (Guernsey), per dozen lbs.	4 0 4 6
— (Guernsey), per bundle of 4 cases	10 0 16 0
Turnip, — (French)	1 0 5 0
— unwashed, bag	2 0 —
— washed	2 6 —
Watercress, p. dz. bunches	0 6 0 6

REMARKS.—Apples: Foreign Apples are still plentiful and meeting with a moderate demand. Good samples of English Apples are selling well. Pears: Larger consignments have been received from France, and the high prices are maintained. Grapes: English supplies are still plentiful with a slight rise in value generally. Foreign supplies are shortening. Tomatoes: There are some fine samples of English Tomatoes on the market and they are selling readily. Supplies from the Canary Islands are limited, the consignments selling freely. Oranges are arriving in larger consignments; good samples are scarce. Nuts of all varieties show an increase in value. The Vegetable market is busy, all kinds of produce being in demand. E. H. B. (Garden, November 16, 1910).

New Potatoes.

Kents—	per cwt. s.d. s.d.	Lincolns—	per cwt. s.d. s.d.
British Queen ...	4 0-4 6	Evergoods ...	3 6-3 9
Sharpe's Express ...	4 0-4 3	British Queen ...	4 0-4 6
Felipse ...	3 9-4 3	Up-to-Date ...	4 0-4 6
Epicure ...	3 6-3 9	Sharpe's Express ...	3 6-4 0
Max Queen ...	3 9-4 0	Epicure ...	3 6 —
		Blacklands ...	3 6-3 9
Bedfords—		Dunbars ...	per bag
Up-to-Date ...	3 9-4 3	Up-to-Date ...	5 6 —
British Queen ...	3 9-4 0	Maincrop ...	5 6 —

REMARKS.—Trade very steady and arrivals plentiful. Prices about same as last week. Edward J. Newborn, Covent Garden and St. Pancras, November 17, 1910.

COVENT GARDEN FLOWER MARKET.

Trade has been very quiet during the past week. Country buyers may find it an advantage to procure supplies of plants, especially foliage plants, before the busy time begins. Chrysanthemums and Ericas are subjects that may be purchased some time before they are wanted, but there is a risk with some of the other subjects. At present the market is well supplied with all the pot plants usually seen at this time of the year.

Chrysanthemums are remarkably good, and several growers have small, well-flowered plants in pots of the type shown so well by Messrs. Butler Bros. at the last exhibition of the National Chrysanthemum Society. Ericas are well flowered. Begonia Gloire de Lorraine, including the Turnford Hall (white) variety, is now in the best of condition. The white variety is not so much in demand as the pink sorts. Extra large plants of both varieties are worth about 2s. 6d. to 3s. 6d. each. Cyclamen are fairly good. Pelargoniums are over for the season. A few plants are seen, but they are not of much value. Lilioms are fairly good. White Marguerites from several growers are well flowered. Solanums are seen in well-berried plants, but the quality varies very much; some of the specimens are remarkably good. All the usual foliage plants are well supplied.

CUT FLOWERS.

It is difficult to estimate the value of any flowers at the present time, but in most instances supplies more than equal the demands. Prices may advance from day to day, especially as those that will keep are being held over for the Christmas trade. Chrysanthemums are the leading feature, and may be had in various qualities. The specimen blooms are not much in demand. This morning I was offered fine flowers of a large incurved white variety very cheaply. The medium-sized flowers of good quality are most appreciated. Lilioms are plentiful, and their prices are rather below the average for the time of year. Roses are plentiful, very fine blooms being seen. Carnations are well supplied. Roman Hyacinth is procurable, and there is plenty of Lily of the Valley to be had. All cut foliage may be procured at the ordinary prices. A. H., Covent Garden, November 16, 1910.

LAW NOTE.

CLAIM FOR COMPENSATION FOR THE DEATH OF A GARDENER.

A CLAIM has been entered in the Sheriff Court at Hawick, N.B., on account of the death of Mr. Robert Reid, gardener to Mr. Charles J. Wilson, manufacturer, Deanfield, Hawick. It is made by his widow, for herself and two children, and the amount sued for is £198 5s., being three years' wages of the deceased, the claim being made under the Workmen's Compensation Act. The grounds of the claim are that the deceased on August 21 last, had been working in Mr. Wilson's garden and greenhouse for about two hours, and that, on going home he had been brushing the garden soil from his boots when he injured his thumb. Either then, or afterwards when working in the garden, he contracted blood poisoning—from which he died, and that it is known that the tetanus bacillus is frequently found in garden soil. The insurance company with whom Mr. Wilson was insured resists the claim, upon the plea that the cause of death was not an injury by accident in the course of the deceased's employment.

Obituary.

W. R. FISHER.—We regret to announce the death of Mr. Wm. Rogers Fisher, which occurred on Sunday last, after an operation. Mr. Fisher, who was born in Sidney in 1846, was a professor in the School of Forestry attached to Oxford University, and he is the author of volumes 4 and 5 of Schlich's *Manual of Forestry*.

TRADE NOTICE.

The seed and nursery business of Messrs. James Service & Sons, Maxwelltown, Dumfries, has been purchased by Mr. David Barr and Mr. David Hunter, who will continue to carry on the business under the name of James Service & Sons. Mr. David Barr has for the last 20 years occupied the position of manager to Messrs. Thomas Kennedy & Co., nursery and seedsmen, Dumfries, and Mr. David Hunter has been manager for the firm of Messrs. Wm. Learmont & Son, nurserymen, Larchfield, Dumfries.

ANSWERS TO CORRESPONDENTS.

* * * The Editors will be glad to receive, for consideration, large photographs of horticultural subjects, suitable for reproduction as Supplementary Illustrations in this Journal.

BEGONIA GLOIRE DE LORRAINE: S. Walker. The plants are badly infested with eelworm. Both the plants and the soil in which they are growing should be burned.

COLOUR BORDER: *Hibernicus*. We do not know of any scarlet-flowering herbaceous plants growing 5 feet or 6 feet high, other than those you mention. While there are plenty of white, yellow, and blue-flowering herbaceous plants growing to this height, the number of reds and scarlets are exceedingly few. We fear it will be necessary to modify your plan of arrangement to get the desired colour effect.

CREOSOTE FOR PRESERVING FRAMES: *Anxious*. Creosoted frames have not been found injurious to the plants that are growing therein. The creosoted timber should, however, be quite dry, and exposed to the weather for some time before being made into frames.

CREOSOTED STAKE: E. F. C. Creosoted stakes have not been found injurious to fruit or other trees. See, however, the above note.

CYPRIPEDIUM: F. H. There is nothing in the specimen received to account for the failure. At the same time, if the material the plant was growing in is similar to that enclosed with the specimen, it is too light and porous for such strong-growing species. Some cultivators put these in a compost containing one-half its bulk of fibrous loam, and others use loam fibre almost exclusively. In such retentive material we have not seen any examples of decay such as that exhibited by your plant.

FELLOWSHIP OF R.H.S.: J. M. S. No examination is necessary. Write to the Secretary, Horticultural Hall, Vincent Square, Westminster, enclosing an entrance fee of one guinea, whereupon you will be proposed for election at the next meeting. If you are a professional gardener you will not be called upon to pay the entrance fee, but must contribute an annual subscription of one guinea.

FORESTERS' TERMS: H. R. Heartshake is prevalent in almost every kind of timber, and may best be described as clefts or splits that follow the medullary rays from the centre outwards. Starshakes radiate from the centre towards the outside, the clefts being widest at the sapwood, the opposite being the case in heartshake. Cupshake is, perhaps, worst of all, and renders the timber valueless for constructive purposes. The shake takes the form of curved splits, which sometimes wholly separate the annual rings. Spanish Chestnut, Oak, and Elm suffer much. These defects occur most commonly in trees that are growing on sandy soil, and may be caused by frost or wind, the latter particularly when of large size. The damage, unfortunately, can rarely be detected until the tree is felled. You would find Webster's *Foresters' Diary* useful in these and other matters. It is published every year, price 2s. 6d.

GAS LIME: T. W. You may with safety apply from 1 to 1½ ton per acre of gas lime to your ground. It will assist in getting rid of the gall-weevil and also help in bringing the plant food present in the soil into an available condition for the vegetables and fruit trees. The gas lime should be spread over the surface of the ground early in winter in order to allow the injurious gases to evaporate. After three or four weeks exposure dig it deeply into the soil, which will then be ready for planting in the spring.

GRAPE CULTIVATION OUT-OF-DOORS: X. Y. Z. In the Marquis of Bute's vineyards, near Cardiff, in South Wales, greater success has been achieved with black than white Grapes. The variety which has been most satisfactory is known as Gammy Noir, and you will do well to try this one with several others. There is a variety known as Reine Olga, which was given an Award of Merit by the Royal Horticultural Society on October 24, 1899, to mark its suitability for outdoor cultivation.

HORTICULTURAL SCHOOLS IN FRANCE: E. M. S.

We do not know of any public gardens or horticultural schools in France where women students are admitted, and there are but few women in France who have taken to horticulture as a profession. In many market gardens women are workers, especially in vegetable gardens, but we do not think there would be any chance of a stranger being admitted among them. However, you might write to Mons. Abel Chatenay, Secretary of the Société Nationale d'Horticulture de France, 84, Rue de Grenelle, Paris, who would be in a position to give you every information on the subject.

NAMES OF PLANTS: J. H. R. 1, *Bouvardia elegans*; 2, *Ophiopogon Jaburan variegatus*; 3, *Codiaeum grande maculatum*; 4, *Codiaeum Queen Victoria*; 5, *Codiaeum angustifolium*; 6, *Codiaeum Evansianum*. The foliage of these plants, called Crotons in gardens, varies very considerably in the different stages, which renders positive identification difficult.—R. F. Cœlogyne (*Pleione*) *præcox Wallichiana*.—E. B. Begonia Scharffii, figured in the *Botanical Magazine*, t. 7023 (B. Haageana). (See *Gardeners' Chronicle*, Oct. 5, 1889, p. 388.)—W. E. *Arbutus Unedo*.

NECTARINE WITH "BROWN ROT": W. E. The best plan is to adopt your suggestion to remove the tree and burn it, for there is always a danger of the disease spreading to other trees in the same house. Remove every particle of the roots, and dig out the soil, replacing it with fresh compost.

PARADISE STOCK: *Constant Reader*. Some prefer the Nonpareil stock, which is recognised by its slightly woolly foliage; others the broad-leaved variety. Stocks may be raised from seeds, but they are more usually produced from layers, suckers and cuttings. Seedlings, as a rule, grow more vigorously than stocks propagated by other methods, and that is another good reason why a dwarfing stock, unlike a Crab or a free stock, should not be raised from seed. The French Paradise is worthless, as it lacks vigour and is short-lived.

PEAR FRUITS WITH SPOTS: G. B. The spots are caused by Pear scab. Spray the trees with the Bordeaux mixture next spring, first, just when the leaves are expanding, then again when the fruits have set.

PEAR PITMASTON DUCHESS: Fr. Capp. The fruits you send are exceedingly fine specimens, and the quality is unusually good for this variety. We have a case in our record book in which six fruits weighed together 7 lbs. 9 ounces, which is scarcely so good as the specimens you mention, as being only just under 1½ lb. each. However, we are informed that a single fruit of this variety, weighing 2 lbs., was sold recently in Covent Garden Market. At the R.H.S. recent fruit Show a specimen of Pitmaston Duchess was exhibited from Colonel Harbord's garden, Gunton Park, Norwich (gr. Mr. W. Allen), which weighed 2 lbs. 1 ounce.

PLANTING SHRUBS: R. R., *Birkdale*. You will be perfectly safe in proceeding according to your letter. At the same time, we may point out that it would be better for the shrubs if some clay could be mixed with the road sweepings and sand, as the road sweepings in themselves are usually of such a character as to lighten and render more porous any soils to which they are added. The buried turf will not in any way injure the shrubs, but the presence of water is quite another matter. Unless you can devise means of getting rid of the water, some of the deeper-rooting shrubs will be sure to exhibit injury when once their roots get into the water-logged soil.

RUST ON CARNATIONS: W. W. Rub the affected leaves with a sponge soaked in a solution of permanganate of potash of a rose-red colour. All the plants should be sprayed once a week with this same solution.

Communications Received. F. H.—R. W.—G. H. R.—E. J. B.—A. H.—R. A. M.—J. D.—R. P., Littlehampton—W. E., Crawley—Chloris—J. F. J. O'B.—F. T. B.—J. V. J. W.—W. P. R.—W. A. B.—W. F. M.—G. M. T.—A. W.—G. H. B., Siden—Inquisitive—G. P., Stirling—F. P.—W. H. C.—J. E., Wakefield—Nil Desperandum—G. H. H. J. W. C.—Omeca—G. H. H. W. Messrs. W. J. W., Ltd.—W. J. V. W. G. S.—W. I.—F. B. Rio de Janeiro—J. J.—J. M.—C. R.—W. H. A.—P. E. C.—D. Mawley

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ROSES IN AUTUMN.

MANY of the species of Rose are very beautiful in autumn, their fruits lending a bright blaze of colour to the surroundings. Apart from their tortured and pampered sisters, all too common in many gardens, these species of Roses are more at home in the wild garden, where they ramble, creep, climb, or form large handsome bushes and trees. In a somewhat unorthodox garden in Mid-Lothian, on a sloping piece of ground bordered by a wooded policy, many species of Roses have been introduced into a scheme of wild gardening with pleasing results. The majority of the occupants are single-flowered Roses, but many of these are of intrinsic beauty in summer, and in autumn are very valuable for their brilliance of fruit and foliage. Yews and Firs are used as subjects for the climbing varieties, and the bright hips of the Roses form a striking contrast to the dark foliage of the trees to which the Roses cling. In late October, several of the Roses were still in flower, enabling one to form an opinion of the glorious display they make in summer, when they are in full profusion of blossom. *Rosa sancta*, the Holy Rose of the Abyssinian cloisters, was still yielding a few of its delicate pink blossoms, and seemed to thrive exceptionally well among some of the other dwarf growers. A variety of *R. rugosa*, named *acicularis*, also in flower, bore large crimson flowers and showed itself to be quite distinct from the others in habit and foliage. The dwarfers

Roses were all planted near the path, and such tiny things as *R. pimpinellifolia* var. *Brightness* and *R. nitida* were noted. The former has bronzy-coloured foliage and jet-black hips, while the latter was very gay in its autumn dress of scarlet foliage and coral-red fruit and spines. Other charming little Roses were: the old Rose of Burgundy, just a few inches high; *R. pyrenaica*, very prettily covered with curious, scarlet hips; *R. venosa*, with brilliant red berries; and *R. Lawranceana*, a very dwarf China with bright, glaucous foliage. Some of the most conspicuous Roses for richly-tinted foliage were of the *rugosa* section, the leaves of these assuming, in many cases, a light golden-yellow, all, of course, bearing many large "apples." Conrad F. Meyer plays an important part in this garden in summer, where it forms enormous bushes laden with delightfully fragrant blossoms, but, beyond retaining its dark green foliage well into winter, it is not particularly noticeable as an autumnal Rose. It is a gem in the wild garden, and is a superb variety for this situation. *Rosa lucida* bears many brilliant scarlet hips, and its foliage turns a striking purple colour, while *R. alpina* has leaves of a deep glowing red. Other strikingly tinted varieties are *R. venosa*, with many red fruits; *R. Saxi*, very bright leaves; *R. complicata*, with very small foliage of a rich colour; and *R. carolina*, pretty alike in leaves and bark.

Mention must also be made of the native variety *R. altaica*, with its bronzy-red foliage and jet-black hips. The Penzance Briars were all represented, but Anne of Gierstein is the most valuable of these for autumn effect, and here it produces an enormous crop of hips. Some of the sorts notable for their fruits are *R. pisocarpa*, with very small pea-shaped hips and a very strong grower; *R. pomifera*, the Apple-fruited Rose, having its branches weighed down with large, handsome fruits; *R. alba*, the old, single, garden Rose, laden with hips of a glowing colour, and *R. parviflora*, having fruits resembling Cherries. Some natural hybrids raised here from the *Rugosa*s were laden with huge hips of brilliant hues, and are of value for this purpose, but in flower they are not of particular merit. Strong growers, climbing up through the trees, were *R. camelæflora*, an evergreen variety; *R. bracteata*, better known as the Macartney Rose; *R. lævigata*, also an evergreen; and *R. polyantha* and *Wichuraiana*, both well known and popular types. Nearly every Rose species known is grown here, so far as they are known to stand the climate of Scotland, and, with one or two exceptions, all do well. *R. Ecæ*, the single yellow Abyssinian Rose, refuses to be established, as also does *R. Moyesii*, a recent introduction from China and a very desirable acquisition. Contrary to general experience, *R. bracteata* does well, and is quite hardy, two or three vigorous specimens being at home on Yew trees. The district is suitable for Roses, and in the immediate neighbourhood, the native varieties attain a great size in the woods and hedgerows. With fruit and foliage the Rose is a valuable plant for autumn effect, and this wild garden is now much enhanced by its brilliance. Passing on through the formal Rose garden, with its climbers on poles and chains, the scene was in marked contrast with that of the wild garden. Beautiful as the latter was

in summer, it was still beautiful in the autumn, whilst the formal Rose garden was by that time devoid of interest. *Geo. M. Taylor, Mid-Lothian.*

ALPINE VALLEYS.

(Continued from page 365.)

THE VÉSUBIE.

THE descent from the Boréon towards St. Martin leads through land of increasing fertility and luxuriance. The glen of the Boréon widens and the wood recedes. And so, through meadows starred with lovely forms of *Campanula persicifolia*, one comes down at last upon the little pleasure town of St. Martin Vésubie (St. Martin Lantosque). Not only must the name-place of *Saxifraga lantoscana* always be a place of pious pilgrimage to the gardener, but St. Martin is, in itself, a corner of the world so charming and set amid surroundings so beautiful as to deserve far more celebrity than it has yet achieved. It is true that the French inhabitants of the Riviera know its delights, and have their summer-villas there, but by the tourist, by the English, not only are the Maritime Alps themselves almost as little known as Tibet, but even this little town, lovely, easy of attainment, warm, delicious and cheap to live in, is almost unvisited.

But it is not the picturesque old houses gathered on a hill between two rivers, it is not the new town besomed among Chestnuts that will draw the gardener. For here begins a yet more potent attraction, the mountain limestone that always promises a good harvest. Nor is the promise belied. One strolls out of St. Martin and along the high road which leads round the other side of the valley towards Venanson; in ten minutes the road is skirted by banks of limestone, from which *Campanula macrohiza* hangs in curtains of lilac violet. Another dozen paces, and the rocks, the slopes, the very roadside gutters are golden with the starry showers of *Hypericum Coris*. High above, rise wooded slopes towards grey limestone crags, and soon their lowest bastions impend over the highway. And there, always on the shady side, one first sees the essential celebrity of St. Martin Lantosque.

Saxifraga lantoscana here grows and seeds exactly as it does on the great cliff at Ingleborough, showing itself more profuse in reproduction than any other of its kin, until, at least, you have seen *S. lingulata* on the rocks above the Val de Roja. On the high ledges hang its wide, great cushions of silver-grey, and every little cranny and wad of Moss below has its seedling or young plant. As one leaves the road and climbs up through the copse at the feet of the cliffs, the *Saxifrage* becomes more and more abundant and its cushions wider and wider. It does not, however, seem to vary very much in habit—to nothing like the same extent as either *Aizoon* or *Cochlearia*. In fact, the only variations that I noticed were one form of great size and profuseness of spike, and another, etiolate and spidery, under a bush. The plant is rigid in its preference for the damp and shady side of the rocks, which, of course, is the reason why it has taken as warmly to my cliff as to its own chosen home. Very rare and very puny are the pieces you will find on the sunny side of the rocks. But on the shady side it hangs in wide masses among *Primula marginata*, which seems quite indifferent as to whether it grows on granite or limestone. Another thing one can note about the *Saxifrage*, is that in its native place it is not nearly so free-flowering as it fortunately is in cultivation. A cushion a foot wide or more will only be responsible for a couple of flower-spikes. The same, as we shall see at Tenda, if we ever get there, applies to *S. cochlearia*.

The Venanson road is ideal for the tired collector, who now finds himself able to pluck half a dozen first-class plants without stirring from the highway. For, a few yards further on, where the slopes turn the hillside and come out into the sun, they are starred with the pearl-white cups of lovely *Linum salsoloides* in abundance; *Hypericum Coris* does not diminish; white and gold cover the hillside in the richest profusion, among bushes of Wild Lavender, and all the grey, odorous vegetation of the Mediterranean coast. The *Linum* is woodier-rooted than the *Hypericum*, which comes up in a neat, sandy tuft at one dig of the trowel, but quite as well worth the taking. I think it by far the most beautiful of its race, as I know it, and have long found it as easy and comfortable in damp West Yorkshire as though it had never heard of the grilling sunbanks that are its home on the torrid Riviera. A little further on, at a turn in the

often that *Lilium pomponium* comes as high and as far as this from the blazing places above the Mediterranean which it loves.

To reach Nice from St. Martin one descends by tram or carriage through the long gorge of the Vésubie to a little uninteresting place of the same name, where one takes train for the coast. The drive occupies some four to five hours, and is a gradual descent towards the arid dustiness of the sea-board. Below St. Martin, *Campanula medium* is very splendid, making high spires of violet on almost every bank, and *Catananche bicolor* is brilliant too. Then there follows a fertile valley, where, in July, there is little to see, though in autumn I remember that the *Colchicum* is abundant. After this, though, the road passes into the tremendous Gorge of the Vésubie, a cañon of some miles in length, between cliffs of limestone that sometimes almost meet overhead. The walls are

ORCHID NOTES AND GLEANINGS.

CATTLEYA PORTIA "LARKIN'S VARIETY"

(*C. LABIATA* × *C. BOWRINGIANA*.)

THE accompanying illustration represents this pretty *Cattleya*, which was shown at the Royal Horticultural Society's meeting on November 8 last, in a small group of hybrids, by Samuel Larkin, Esq., The Ridgeways, Haslemere (gr. Mr. Hale). It is of a clear, rosy-mauve tint, the front of the labellum being light reddish-purple, and the disc tinged with yellow. The variety is remarkable for the unusual width of the petals and the attractive form of the flower generally.

Cattleya Portia was originally flowered by Messrs. Jas. Veitch & Sons, in 1897, and since that time other raisers have been successful in flowering plants from crosses made both ways, and consequently varying in character.

The crosses of *Cattleya Bowringiana* are very useful, as they generally display their flowers in the early winter, when blossom is not plentiful.

LÆLIO-CATTLEYA × ETONA

(*C. SUPERBA* × *L. CINNABARINA*.)

A FLOWER of the brightly coloured hybrid raised by Eustace F. Clark, Esq., Chamouix, Teignmouth, from seeds sown in June, 1902, has been sent us. The flower, which is very brightly coloured, is over 4 inches across; the narrow, lanceolate sepals have a distinct tinge of yellow at the back traceable to *L. cinnabarina*, the surface being closely set with finely spotted mauve lines. The rather broader petals are tinged and veined with mauve colour. The lip displays the influence of *L. tenebrosa*, especially in its deep reddish-claret colour and the dark lines from the base on a yellowish ground. *Cattleya superba* shows most in the firm texture of the flower.

ORCHIDS AT BARONSHALT, TWICKENHAM.

THE collection at Baronshalt, the residence of Henry Little, Esq. (gr. Mr. Howard), is one of the oldest in the country, and famous for its fine selection of *Lælia purpurata* and good *Cattleyas*. *Lælias*, and *Lælio-Cattleyas* generally, some selection of which gives a fine display of flowers at all seasons.

On the occasion of a recent visit, the hybrids of *Cattleya Bowringiana*, which are special favourites, were making a grand display in the long, lean-to house of about 125 feet in length. *Cattleya Mantinii* (*C. Bowringiana* × *C. Dowiana aurea*) and its varieties *nobilior* and *colorata* were represented by very fine specimens, one plant being about 4 feet across and furnished with many large heads of rich purplish-crimson flowers, the larger spikes being each a perfect bouquet. *C. Mrs. J. W. Whiteley* (*C. Bowringiana* × *C. Hardyana*) was equally fine, one spike having 13 large handsome blooms. *Cattleya Wendlandiana* (*C. Warszewiczii* × *C. Bowringiana*), one of the early Veitchian hybrids, was a fine colour, and *C. Brownia Veitchii* variety (*C. Bowringiana* × *C. Harrisoniana*), when grown as it is at Baronshalt, shows itself to be a really pretty hybrid, some of the plants having spikes bearing 8 to 14 pink flowers with violet veining on the lip. *C. Portia* (*C. Bowringiana* × *C. labiata*) had fine heads of bloom of the colour of *C. labiata* and varied much in size and form; those nearest to *C. labiata* being the larger, while those which partake most of *C. Bowringiana* have the most flowers on a spike. Other varieties of *C. Bowringiana* crosses (the value of which cannot be over estimated, as they give their bright flowers late in the year) which were in bloom were *Lælio-Cattleya Parysatis* (*L. pumila* × *C. Bowringiana*), *L.-C. Tenos* (*C. Bowringiana* × *L.-C. Nysa*), and *L.-C. Tiresiae*, and with them the fine varieties of *C.*



FIG 159.—CATTLEYA PORTIA "LARKIN'S VARIETY": COLOUR ROSY-MAUVE, WITH REDDISH-PURPLE FRONT TO THE LIP.

road, I clambered up among rock-ledges white as our own scar-limestone, clothed in scrub and coated with strange *Sempervivums*; and there, on a shoulder of cliff, I came upon a rare plant of whose existence in these regions I knew, but upon whose habitat I had never dreamed that I should have the luck to stray thus accidentally. On the hottest limestone rock, in stony ground, in crevices filled with dense, dwarf shrubs, towered here and there the stems of *Lilium pomponium*—not the stinking, yellow horror of our gardens, which is really *L. pyrenaicum*, but the genuine Mediterranean plant, vermilion-flowered and gorgeous, cousin-german to *Heldreichii*, *Carniolicum* and *Chalcedonicum*. Though St. Martin lies comparatively low (some 3,000 feet), and though the rocks on which I found the Lily were very hot and sun-baked, I fancy it is not

hung with cushions of a little *Potentilla*, which is probably *P. saxifraga*, and annoys one by looking as if it ought to be something so much better than it is. And then *Saxifraga lantoskana* takes possession. In sheets, and beds, and cushions and masses, at one particular bay in the road, it seems to clothe every inch of space from top to bottom of the huge precipice. In flower-time that rock-wall must be a splendid sight. It has the further advantage of being impregnable. But, after the road emerges from the forge, there is nothing more to see in mid-July. We are now near the level of the Mediterranean; everything is dust-dry and dust-grey; only a rare flower here and there of pink Rock Rose, or *Coris monspeliensis*, remains to remind one that there is any such thing as a flower in these torrid regions. *Reginald Farrer.*

Bowringiana itself. *Lælio-Cattleya Violetta*, L.-C. *Blechnensis*, L.-C. *luminosa*, L.-C. *Gottoiana*, L.-C. *Schilleriana*, and other *Lælio-Cattleyas* were finely in bloom, and among hybrid *Cattleyas* noted were *C. Carmen* (*C. Lindemanniana* and *C. Warszewiczii*), of a very pretty tint, several *C. Minucia*, *C. Miss Williams*, *C. Thayeriana*, *C. Fabia*, *C. Iris* and other showy *Cattleyas*. At the end of the house, one side was taken up with the grand specimens of *Lælia purpurata*, which have been cultivated by Mr. Little for many years with such great success that many of the plants are now sending up 6 to 10 sheaths, which promise a great show next summer. *L. purpurata* Littleiana, for which a First class Certificate was given a good many years ago, and *L. purpurata* Baronshalt variety, which received an Award of Merit, are among the best, and show great improvement over their early form. These *Cattleyas* and *Lælias* are grown in a comfortably warm intermediate house; the *L. purpurata* are making up their new growths and are kept tolerably moist at the root. Indeed, Mr. Little keeps his *Lælias* rather warmer and more moist in winter than they are kept in some collections, and evidently with the best results. *Osmunda* fibre and *Sphagnum* moss are used as potting material, and leaves are carefully avoided, as Mr. Little had a sad experience in the use of them as a potting material for Orchids when they first came into use. His plants lived, but they made little root, and Mr. Little believes that the collection would have been ruined if the use of leaves had not been abandoned. A distinct yellow variety of *Brassia Lælia* Mrs. Gratrix and other *Brassia Lælias* and *Brassia-Cattleyas* thrive admirably under the same treatment. A selection rather than a collection of *Cypripediums* is grown, and this includes the clear yellow and white *C. insigne* *Sanderæ* the handsome *insigne* *Harefield Hall* and other good varieties, many of which were in bloom, together with the distinct, greenish-yellow *C. Rosettii* and *C. Harrisianum viride*. Among others in flower were the old but not common *C. purpuratum*, *C. Littleanum*, the rare natural hybrid of *C. Lawrenceanum* and *C. Dayanum*; *C. Curtisii*, *C. callosum* *Sanderæ*, *C. Charlesworthii*, and many others.

TREES AND SHRUBS.

SOME SPINDLE TREES.

SEVERAL species of *Euonymus* are noteworthy for their highly-coloured fruits and, when laden with these in autumn, they produce very charming effects in the pleasure grounds, park, or woodland. The leaves also assume brilliant autumnal tints.

The British Spindle Tree (*Euonymus europæus*) is also a good subject for a lawn, as it attains the size of a small tree 12 feet to 20 feet in height. In autumn, the trees are usually loaded with the bright rose coloured fruits which, during October, burst open and disclose the orange-coloured seeds. There are several varieties differing slightly from the type; the most noteworthy are fructu albo with white fruits, and pallidus. The large-leaved Spindle Tree *E. latifolius* is a native of Europe and Asia. It differs from our British species in having much larger fruits and foliage. The habit of the tree is also distinctly looser in character. A Japanese species, *E. yedoensis* is distinguished from *E. latifolius* in having shorter pedicels and smaller wings to the fruits. Compared with *E. latifolius*, a fourth species, *E. planipes*, has fruits which are much darker in colour and round in shape.

E. oxyphyllus, a native of China and Japan, is also noteworthy for the highly-coloured fruits. The fruits of this species mature earlier than those previously mentioned, bursting open in September.

In the matter of soil and position, the Spindle Trees are not fastidious, thriving in most situations and ordinary garden soils. Seeds form a ready means of propagation.

The flowering season is May, but, being small, the flowers do not attract attention. A watch, however, must be kept about this time for the caterpillars of the small ermine moth, which, if neglected, quickly clear the plants of the young leaves and flowers. An effective remedy is to spray with Paris Green or some other arsenical compound. A. O.

FOCKEA CAPENSIS.

FOCKEA is a small genus of *Asclepiadaceæ* not far removed from *Stephanotis*. All the species are African perennials with large, fleshy root-stocks, thin, twining stems, opposite leaves and axillary cymes of small flowers. They have no economic value except in the rootstock, which is said to be boiled and eaten by natives. Horticulturally they have no value whatever, but the plant of which an illustration is here given has



FIG. 100. *FOCKEA CAPENSIS*, AS GROWN IN THE IMPERIAL GARDENS AT SCHÖNBRUNN, NEAR VIENNA.

an interest on account of its having been in the Imperial Gardens at Schönbrunn, near Vienna, more than 100 years. This plant until quite recently was supposed to be the only survivor of an extinct species, but Dr. R. Marloth found it wild in 1906 in the neighbourhood of Prince Albert, South Africa. There it occurs in considerable patches among the shrubs on the slopes of the Sandriver Mountains, and the tubers, which are irregular in shape, brown, and warty skinned, are sometimes very large, weighing 50 lbs. or more. Two other species, *F. angustifolia* and *F. undulata*, have Turnip-shaped tubers, which are edible either in a raw state or after being boiled with sugar and made into a kind of jam. Another closely related species, *F. glabra*, has been in cultivation at Kew for at least 30 years. Formerly there were two plants of it, named *F. capensis*, one with a flat tuber like a cobbler's lapstone, the other Pear-shaped, and it was thought that *F. glabra* and *F. capensis* were synonymous, but Mr. N. E. Brown, in a recently-published volume of the *Flores Capensis*, states: "I have maintained the plant (*F. capensis*) as a distinct species from *F. glabra*, leaving future discoveries to prove or disprove the correctness of the view." The Kew plants are,

therefore, *F. glabra*, and, so far as we know, the Schönbrunn specimen is still the only living example of *F. capensis* in cultivation.

The growth of *F. capensis*, as shown by the behaviour of the Schönbrunn plant, is exceedingly slow. In 1800 (about) the tuber, according to Jacquin (*Fragmenta*, p. 31), was 1 foot long and 6 inches in diameter, and it is almost the same sizes now. Mr. Brown suggests that either the tuber attains its maximum development in a comparatively short period, and then remains stationary, or else the rate of growth must be excessively slow, in which case a tuber weighing 50 lbs. would be of very great age. We are indebted to Herr S. Sávoly, Budapest, for the drawing of the Schönbrunn plant here reproduced. W. W.

NOTICES OF BOOKS.

HEREDITY.*

THIS volume on heredity will certainly not be the least popular of the new series of shilling manuals published by the Cambridge University Press.

The subject is of such exceptional interest and increasing importance that no one can afford to remain in ignorance of the results achieved in this branch of science during the last few years, while for those concerned in any way with the breeding of the domestic races of plants and animals, or for those interested in social problems and the betterment of the human race, a knowledge of this subject is not merely of interest but a necessity.

In a subject of such complexity, it is no light task to present, within the narrow limits of some 140 pages, an account that shall be at all adequate on the one hand, and readily intelligible to the varied classes of readers to whom it will appeal on the other. Mr. Doncaster is to be congratulated on his achievement.

The kind of questions to which this science endeavours to supply answers is dealt with in the first, introductory chapter; and although the answers are, in the present state of knowledge, in many cases incomplete or altogether wanting, yet the number

of problems to which confident replies can now be given encourages the hope that the remainder will be found to be capable of solution.

Mr. Doncaster rightly warns us that, when we have determined a given character to be inherited according to certain rules in one species of organism, we must not assume that the inheritance of this same character follows similar rules in another species—that conclusions arrived at concerning the transmission of, say, tallness in Sweet Peas cannot be applied directly to tallness in man.

The part of the book that the majority of readers will no doubt find of greatest interest is the concluding chapter dealing with inheritance in man, and it is especially in this part of the subject that the above warning is most required. The second and third chapters contain a clear account of the phenomena of variation; the significance of continuous and discontinuous variation is explained and the part probably played by each in the production of new species and varieties is discussed. The possible

* *Heredity in the Light of Recent Research*, by L. Doncaster. The Cambridge Manual of Science and Literature, 1s. net. (Cambridge: The University Press.)

causes leading to the appearance of new variations are also examined in some detail.

As explained in Chapters IV.-VI., there are two methods of studying the phenomena of heredity, each of which has its own special advantages and drawbacks. The Mendelian method is for the most part only fully applicable where experimental breeding is possible and where the character, the inheritance of which is under investigation, is clearly marked off from other characters without intermediate connecting forms, i.e., in cases of discontinuous variation.

It is concerned with the way the characters of any one individual are handed on to the immediate offspring.

In the case of man, this method has only a limited applicability, and the second, known as the biometrical method, is often the only one that can be used. But this second method, being a statistical one, only provides information as to how any given character is inherited in the race considered as a whole, and whilst serving to demonstrate that offspring resemble parents, with respect to any quality, to a certain degree on the average, can provide no definite information with regard to any given individual.

Readers with non-mathematical minds will be grateful to the author for his lucid treatment of this mathematical subject.

Seeing that the average man's interest in himself is greater than his interest in the race, the cases of Mendelian inheritance will probably be of greater interest to the majority of readers. For, though the number of instances in which the mode of inheritance of a given character has been determined by experiment is not overwhelmingly great; yet the results which have been obtained have an impressive certainty which does not appear to attach to the more general statistical results obtained by the biometricians.

There is no doubt that the author is well advised to discuss thoroughly the cases he selects, rather than try to introduce others at the cost of over-compression and possible loss of clearness. This consideration was no doubt the reason for not including some discussion of such phenomena as "dominant whiteness," "coupling," &c., that would have rendered the book more complete. It seems a pity, too, that room could not be found, in an appendix perhaps, for the inclusion of a method of determining the constitutions and relative numbers of the offspring from parents of known constitution, such as the graphical method used by Bateson and Punnett. But where so much has been included it would be ungenerous to complain because the author has not given us more.

The book is to be welcomed, not only on account of the interest of its subject, but as an example of the scientific method as applied to biology. There is sometimes a tendency, in biological literature, to rather unduly mingle hypothesis with fact, with the result that the subordinate position of the former as compared with the latter is somewhat obscured. Nowhere is the temptation to such treatment so great as in a popular or semi-popular work. The author, naturally desirous of connecting together his more or less isolated facts on a continuous thread of hypothesis, is apt to commit the scientific sin comparable with jury packing—of selecting his facts to fit his hypothesis.

The investigation of heredity is peculiarly liable to suffer from such treatment, though, as a matter of fact, the text books written in English, for example, those by Bateson and also by Professor Punnett, are admirably free from this defect.

The acceptance or rejection of evidence cannot help being, to some extent, a personal matter, and unless the writer keeps a careful watch on himself he is unconsciously inclined to accept more readily evidence which confirms

his hypothesis rather than that which does not. Mr. Doncaster has done well to keep the "possibly true," for which the evidence is not absolutely conclusive, subordinate to "certainty," and also to relegate mere hypothesis, for the most part, to an appendix.

THE FLORA OF NEW GUINEA.

In the *Gardeners' Chronicle* of February 26, 1910, p. 136, there is a notice of the first part of the botany of Dr. H. A. Lorentz's expedition in Dutch New Guinea, containing, among other families, the Orchidaceæ and Palmaceæ. The second part has now been issued, continuing the pagination to p. 426 and the plates to n. 68. Between 40 and 50 families, or natural orders, are dealt with in this part, of which about half are represented by only one to three species each, 16 by only one each. Indeed, it seems probable that more attention was given to Orchids and some other groups than to the vegetation generally. Euphorbiaceæ are rather numerous, but include no novelties of special interest. Of the two Hippocrateaceæ, one is described as a new genus under the name of Salacia.



(Photograph by Sir Herbert Maxwell.)

FIG. 161.—*CAMPANULA BARBATA* AT MONREITH: FLOWERS PALE BLUE.

cratea, differing from Salacia in having a globose, indehiscent fruit, and globose, wingless seeds. The Proteaceæ are limited to *Banksia dentata*, an Australian species, and a new *Helicia*. Among the few Rutaceæ is a new *Citrus*, *C. grandiflora*, described as having petals 35 millimetres long, which, assuming the petals spread horizontally, would give a flower nearly 3 inches in diameter, and much larger than those of any previously-known species. The Dilleniaceæ are represented by a *Dillenia* and four species of *Saurauia*, a genus now usually referred to this family. Of *Barringtonia*, which seems to find its greatest concentration in New Guinea, three species are described as new. The Myrtaceæ proper are few, and those belonging to characteristic Australian genera five in number. Of these two, *Melaleuca Leucadendron* and *Bæckea frutescens* are widely dispersed in Malaya, the latter extending northwards to China. Two others are also Australian, and the fifth, *Leptospermum parviflorum*, has hitherto only been observed in the mountains of Northern New Guinea. More interesting are

the Gesneraceæ of the tribe Cyrtandreeæ. Fourteen species are enumerated, all of them endemic. There is one species each of *Æschynanthus*, *Dichrotrichum* and *Monophyllaea*, and 10 of *Cyrtandra* itself, some of them quite ornamental plants. *C. Wentiana*, especially, must be a very fine species. It is a shrub 12 to 15 feet high, with oblanceolate leaves $1\frac{1}{2}$ to 2 feet long, and clothed with a pale-yellow tomentum on the under surface. The wholly yellow flowers are in axillary clusters and about 2 inches long, the calyx as large, and almost enclosing the corolla. *Cyrtandropsis* is the name of a new genus of one species, remarkable for its unisexual, inconspicuous flowers. The Acanthaceæ are represented by only two species, and the Compositaceæ by 17, more than half of which are widely-dispersed weeds, and mostly introduced in New Guinea. Of three species of *Nepenthes* one, *N. neoguineensis*, is new and nearly related to *N. Reinwardtiana*, a species apparently not in cultivation. Both species bear green pitchers of moderate size and elegant shape, though devoid of brilliant colouring. The Cycladaceæ, Gnetaceæ, and Casuarinaceæ number one species each, all familiar plants. *Nymphæa Lotus*, *N. stellata* and *N. gigantea*, and the Bornean *Barclaya Mottleyi* are the only showy aquatics. Notable Mimosaceæ are three new species of the pluricarpellary *Archidendron*. Verbenaceæ are relatively numerous, and include the handsome *Clerodendron magnificum*. A small collection was made of fresh-water algae, of which an interesting account is given.

CAMPANULA BARBATA.

EVER since I first brought home this plant 40 years ago from the Albula Pass, I have found it difficult to keep—apt to damp off in winter—until last year when it took to seeding itself profusely over the wall garden. Seedlings sprang up in all directions, indifferent, apparently, to whether the soil was loam, sandy, lime rubbish or peat, and they flowered with a liberality never manifested by their carefully-tinted parents. I enclose a photograph of one of them (see fig. 161). There was no variety of colour or habit among them; all were of the typical palest blue with white hairs. *Herbert Maxwell, Monreith.*

AMERICAN NOTES.

CORNUS SLAVINII.

In the June number of *Rhodora*, the monthly journal of the New England Botanical Club, Alfred Rehder, of the Arnold Arboretum, Harvard University, describes a new hybrid Dogwood under the above name. A group of the type plant grows in Seneca Park, Rochester, N.Y., where my attention was first called to it by B. H. Slavin, the foreman of the park, in 1905. Flowering and fruiting specimens were sent to the Arnold Arboretum in the same year for observation in the herbarium, and living plants were also sent. After careful investigation, Mr. Rehder came to the conclusion that it was a hybrid between *Cornus circinata* and *C. stolonifera*.

As known hybrids in the genus are extremely rare, and only two natural hybrids have been described (the other one also by Mr. Rehder, in the first volume of *Trees and Shrubs*, and described under the name of *C. Arnoldiana*, a hybrid between *Cornus paniculata* and *C. Purpusii*), the addition to this interesting and ornamental genus is highly important. Only three stations are at present known for *Cornus Slavinii*. One is mentioned above, another is in Durand-Eastman Park, Rochester, N.Y., and the third in Piscataquis County, Maine.

Cornus Slavinii grows from 5 feet to 7 feet high, with upright branches. The young branchlets are at first greenish, but late in the season they

assume the purplish end appearance of *Cornus stolonifera*. The oval to ovate leaves, acuminate at the apex, and rounded at the base, are glaucous beneath, and covered with villous pubescence. In this respect it is markedly different from *Cornus stolonifera*, which, on the under side of the leaves, is whitish, with slight pubescence. The general outlines and characters of the leaves much resemble *C. circinata*. The flowers appear about the first week in June, and are intermediate in flowering between the parents. *Cornus stolonifera* usually comes in flower about the middle of May, and *C. circinata* from June 20 to 25; *C. stolonifera* has the habit of flowering intermittently throughout the season. The sub-globuse, pale-blue fruits ripen about the end of July, and are very attractive.

One character of *C. Slavini*, to which Mr. Rehder does not call attention, is its distinctly stoloniferous character; that is, it sends out subterranean shoots, and forms gregarious clumps, whereas, in *Cornus stolonifera*, so far as we have seen, the shoots or branches are sent out or disposed on the surface of the ground like layers, and are not really stoloniferous in the true sense.

A large percentage of the seeds are fertile, and germinate easily, and, as might be expected, the seminal offspring show considerable divergence of characters from those of the parents.

Cornus Slavini is a most interesting and useful shrub for the decoration of parks and gardens.

John Dunbar, Rochester, N.Y.

FOREIGN CORRESPONDENCE.

TRIAL OF ROSES AT BAGATELLE.

I AM directed to remind you that, during the years 1911-12, as in previous seasons, a competition will be held for new Roses, which will be open to any who care to send its specimens, with the name of the Rose and of the grower.

I beg to give you below the directions which I am requested to give those who wish to take part in the competition:—

(a) The plants must have been cultivated, where possible, in pots, and several specimens—at least five—are to be submitted to the Bagatelle Rosery (I.), before April 15. They must be accompanied by a note on their origin, parentage, and, where possible, the particular treatment they should receive.

(b) The new Roses exhibited will be placed in the open ground immediately on their arrival at Bagatelle, and will remain in the same place until the month of October in the second year, in order that the judges may have the opportunity of studying, during two seasons, their flowering properties, and the quality of their growth.

The address to which the Rose trees are to be sent is as follows:—Curator des Promenades, Roseraie de Bagatelle, Bois-de-Boulogne, par Neuilly-sur-Seine, en gare de Neuilly, Porte Maillot. J. C. N. Forestier.

FORGOTTEN FORAGE PLANTS.

We know from the classics that in the agriculture of the past a *Cytisus*, about which there is a veil of mystery, rendered great service in the feeding of cattle, and especially of goats. In the *Memoires d'Agriculture de Paris*, for 1787, M. Amoureux argued that the plant in question was the Tree Lucerne (*Medicago arborea*), or *Cytisus* of Virgil, celebrated by him for causing cows and goats to yield abundance of milk, while its flowers were grateful to bees. This shrub was a native of Greece and the Archipelago. There are other *Cytisi* which are known to occur in the flora of Greece. They, unlike the Labor-

num, are non-poisonous and so may also have been forage plants. In the East, a leguminous plant known as *Cajanus judicus* has afforded food for animals from time immemorial, and has been imported into and naturalised in the West Indies.

The fact of the matter is, that the *Cytisi* of warm countries, and especially the many species native of the Canary Islands, are non-poisonous, differing in this respect from *Cytisus Laburnum* and three or four other species from north-west Europe, which are always poisonous.

Amongst Canary Island plants, mention may be made of the *Tagasaste* (*Cytisus proliferus* var.

has afforded the needy farmers invaluable food for their cattle; hence this Alpine Broom might render similar services in the high plateaus of South Africa. When it flowers, it is an excellent, probably unsurpassed food for bees. In these days when so much is talked about re-afforestation, all these leguminous shrubs have a very great value, as, owing to the property their roots possess of fixing atmospheric nitrogen and thus manuring the soil, they would be most suitable precursors of forest plantations. It was with *Ulex europaeus* (Furze) that the famous Pine forests in the Landes district, south of Bordeaux, were started, and thousands of acres of desert

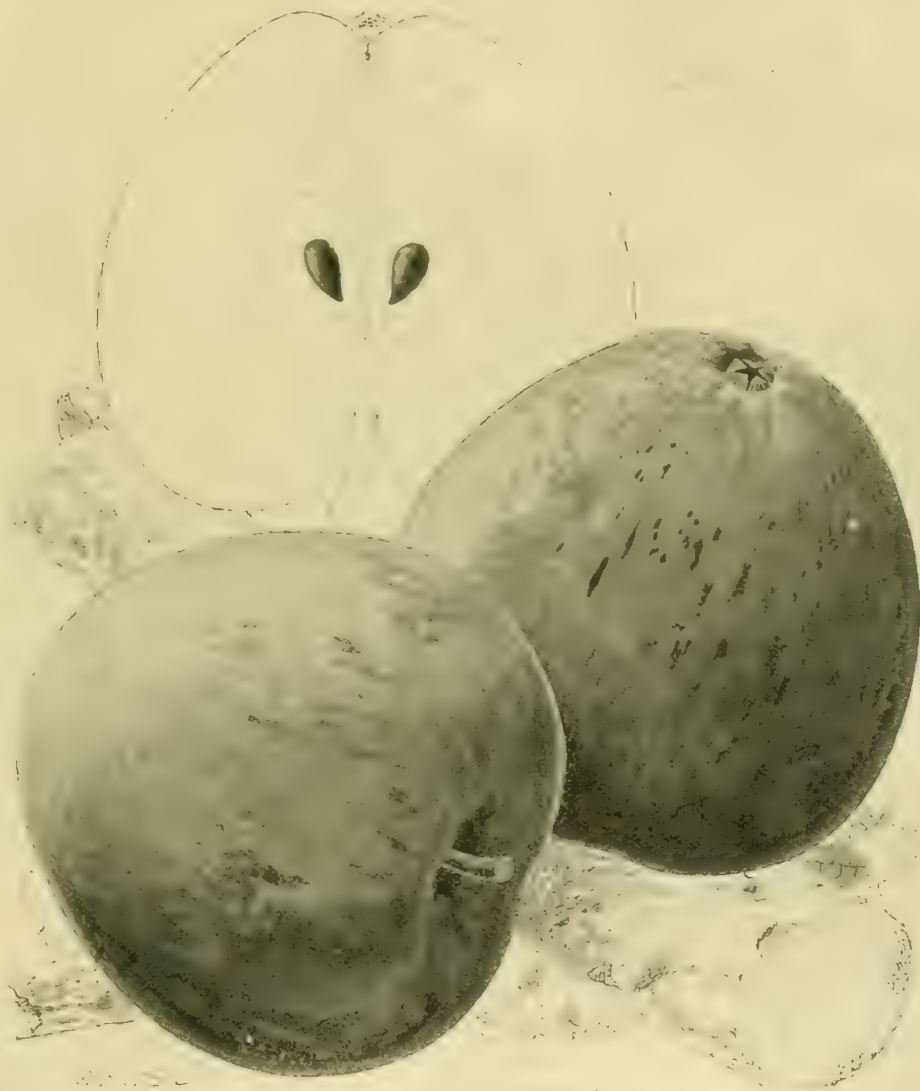


FIG. 162. DESSERT APPLE "ARD CAIRN RUSSET": RECEIVED R.H.S. AWARD OF MERIT ON NOVEMBER 8. (See p. 361 ante.)

palmensis) and *Yacia* (*C. stenopetalus*), and the beautiful *Gonista splendens*, all of which are used as valuable fodder plants in the Island of Palma, of which they are natives. In northern countries, where rains abound and where food for cattle is seldom scarce, these plants would not thrive, but in many countries subject to droughts, such as the Cape, Australia and California, and where there is no irrigation, all the *Cytisi*, being capable of withstanding severe droughts, would supply a great want.

During a recent prolonged drought in Teneriffe, the remarkable native White Broom, called *Spartocytisus supranubius*, which grows on the highest mountains at an altitude of 9,000 feet,

country were converted into valuable forests through the genius of a man (Bremontier) who foresaw the opportunity, and who was generously supported by the great Napoleon.

Even the Spanish Broom (*Spartium junceum*), if not used to excess, is a useful fodder plant, and was at one time a very serviceable textile plant, but its qualities have long since been forgotten; so much so, that it once cost the authorities at Kew a long and interesting correspondence to confirm its past merits. This Broom will grow in unfertile lands where nothing else prospers, and would be very useful for re-afforestation purposes. George V. Perez, Puerto Ordaz, Teneriffe.

NEW GARDEN WORMS.

WHILE on a visit to Cambridge some time ago, I took the opportunity to explore the Botanic Gardens for Annelids, and had the good fortune to come across a species which is new to Britain. As it has not yet been found elsewhere, it might be assumed that the worm is of foreign origin, though it seems to be perfectly at home on the fringes of the pools. It will, in all probability, be found at Kew in similar situations when the lakes come to be explored. The name of the worm is *Allolobophora Hermanni*, Mich., but the generic name will have to be altered when the affinities of the species have been more fully determined. It was first described by Prof. Michaelsen, of Hamburg, in 1890, from specimens found in a morass in the Harz Mountains. The *Monograph of the Oligochaeta*, by Beddard, devotes only a few lines to it, which are as follows:—

Length 40 mm., breadth 2 mm.; number of segments, 100. Tubercula pubertatis on xxix.,

The form of the worm is very graceful, similar to that of a *Phreoryctes*, and it is cylindrical both in front and behind. The mean length in alcohol is 60 mm., or 2 to 2½ inches, and the diameter 1½ to 2 mm. In a few cases the animal attains a length of 70 to 75 mm. The diameter, which is usually under 2 mm., reaches a maximum in the region of the tubercula pubertatis, which are large and prominent. The number of segments is ordinarily 110 to 115, but it may be found anywhere between 90 and 150. The worm is greyish in alcohol, the colour being clearer among the young than among the old, but it is never deep. The prostomium cuts about three-fourths of the first segment or peristomium. On the 15th segment, as usual, one finds the male pores, which are, however, not easily seen till the creature is adult or nearly so. The openings are then situated on large, white papillæ, which extend over part of the adjoining segments. One is reminded of *Allurus* and of the pretty little *Allo. mammalis* by this appearance. One also finds prominent

ments, to the number of two pairs, and open on the line of the third seta.

The worms were found in association with *Lumbricus Michaelseni* and *Lumbriculus* by Dr. de Ribaucourt, and in Cambridge with *Allurus*. Its form and manner of life suggest that it is a transition form between the earth and fresh water species, and is related to *Allurus* and *Helodrilus*. The two latter are British, and it would not, therefore, be surprising to find that the new species is indigenous. A species of *Helodrilus*, which, I think, is new to science, has this year been found in Cornwall, and this encourages us to hope for yet further discoveries. I venture to repeat my appeal to gardeners and others to send rare specimens to me for description in the *Monograph* which I am preparing for the Ray Society. *Hilderic Friend, Swadlincote, Burton-on-Trent.*

BROMELIACEÆ OUT-OF-DOORS AT CAMBRIDGE.

THE tender plants that are grown out-of-doors in the shelter of the Plant Houses at Cambridge have been a feature for many years. The Cacti have been illustrated and described a number of times, but there are other groups to which attention has not been drawn. One of these is the group of Bromeliaceæ. The accompanying illustration (fig. 163) shows a fine plant of *Puya chilensis*, which is 6 feet high and 6 feet through. It has been in this position for a number of years, and this year I hoped it would flower, but it is branching, and, I believe, therefore, that it is intending to spread laterally and not to flower. It grew from quite a small plant, and has long been a fine specimen. In winter it has the protection of a glass light overhead, and in severe weather mats are hung in front of it.

The Bromeliad next in height is *Greigia sphacelata*, half of which is shown in the picture on the left. It is about 3 feet high and as much through. It does not flower, but the mass of bright green foliage is distinct and attractive. One of the finest masses is formed by *Rhodostachys pitcairniifolia*, which measures 3 feet through and is 2 feet 6 inches high. It flowers indoes sometimes, and has close heads of small, blue flowers seated in a rosette of bright red leaves; here it has not flowered, but the dark green, novel-looking foliage does not fail to attract attention. Two other kinds of *Rhodostachys* are quite distinct from the last, but resemble one another. One is *R. littoralis*, which has leaves that are distinctly silvery below, and form a mass 4 feet through and 2 feet 6 inches high. Still more silvery is *R. andina*, which forms a mass of leaves 4 feet through and 2 feet high. All the fore-mentioned plants are natives of Chili. Native of Brazil, and quite hardy under the conditions provided, is *Dyckia rariflora*, which has leaves spreading in rosettes on the ground and giving the idea of green, narrow-rayed star-fish. It produces spikes of orange flowers which have been very ornamental during the summer and flowers are still trying to open. The species does perfectly well. *D. brevifolia*, also from Brazil, is more tender, but quite easily cultivated. All these Bromeliads have spiny-margined leaves which save them from any undue handling by the curious; all are sharp, and those of *Puya chilensis* are quite strong in character. One or two other kinds are being tried, and any other suitable kinds that can be obtained would have a trial in this position, the most important species for the purpose that occurs to me being *Puya Whytei*.

Another group of considerable interest is that of the Zingiberaceæ. *Zingiber mioga*, a native of Japan, does well, but it has not yet flowered; *Roscoea purpurea*, in two forms, also native of the Himalayas, has succeeded well for many years, and several species



FIG. 163.—*PUYA CHILENSIS* GROWING OUT-OF-DOORS IN CAMBRIDGE BOTANICAL GARDEN.

xxx. First dorsal pore iv.-v. The setæ are paired, though the two setæ of each pair are more widely separated in the anterior segments; these setæ are larger than those which follow. This species seems to be without integumental pigment."

The first authority to add anything to our scanty stores of knowledge was Dr. de Ribaucourt, who gives a very full description of this interesting creature in the *Dissertation on Swiss Worms* which he prepared for his doctor's degree in 1896. As my Cambridge specimens exactly agree, in their adult condition, with his very accurate diagnosis, I shall follow very closely that author's description.

Dr. de Ribaucourt commences by saying that he collected numerous specimens in the humid earth found by the pools in the forest of Bremgarten, near Berne, and he extends the account given by Michaelsen by adding new details.

papillæ on the 11th segment similar to those often seen on *Lumbricus castaneus* and some other annelids.

The girdle, which is always an important organ in diagnosis, extends from the 22nd to the 32nd segment, and when young the dorsal pores can easily be seen here. The first three rings of the girdle seem not to be a part of the clitellum until the worm is adult, and its characters are attentively studied. The tubercula pubertatis are on segments 29 and 30, and these two segments are greatly enlarged ventrally. Sometimes the two adjoining segments, 28 and 31, are affected thereby; but there are no other papillæ or glands on the girdle. The dorsal pores commence between the fourth and fifth segments.

The chief internal characteristic is found in the position of the spermathecae. These are very small, and are, therefore, difficult to discover. They occur, however, in the 10th and 11th seg-

of *Hedychium* are perfectly at home. They grow into fine masses, and among them are *H. flavescens*, *H. angustifolium*, *H. Gardnerianum*, and the hybrid *H. Sadlerianum*. Unlike the *Bromeliaceæ*, these *Zingiberaceæ* flower freely, are always ornamental, and in some cases strikingly handsome. Four genera are thus represented in this out-door culture. Others might succeed, but it is impossible to carry these experiments beyond a certain limit. *R. Irwin Lynch, V.M.H.*

WATERSIDE PLANTS AND WATER PLANTS.

NOTHING is more suitable for planting by the side of a large lake than *Gunnera manicata*. The handsome, gigantic leaves, some 8 feet or 9 feet across, are very attractive, and their reflection in the water is always beautiful. There

edge. The common *Calla* has been in flower from July up to the present time, but it produced the greatest show of blossom in July, the plants rivalling many of those grown in pots. *Nymphæas* are also indispensable subjects for planting in the water; some of the best are *N. Robinsoniana*, a vigorous-growing variety, producing large, violet-purple flowers shaded red, with orange-red stamens. *N. W. Dougie*, one of the choicest of Water Lilies, having cup-shaped deep pink flowers 5 in. to 6 in. in diameter. *N. sanguinea*, a bright crimson-flowered variety changing to deep red, very free in blooming; *N. James Brydon*, pink; *N. Ellisiana*, a brilliant shade of carmine-purple, very free and sweetly scented; *N. Marliacea chromatella*, canary yellow; and *N. purpurata*, a sweetly-scented variety and free in flowering.

the Water Violet, is showy when in bloom, as is also *Ranunculus lingua*. This plant grows rapidly, and soon requires thinning. *Vallisneria spiralis* is a suitable plant for covering large areas of water; it can be kept in check by thinning. The peltate leaves and yellow flowers float on the surface of the water. The Rice plant (*Zizania aquatica*) is also very effective; *Caltha polypetala* is charming in the spring, and quantities should be grown to make a bold display in the water. Logs of wood or blocks of stones may be covered with *Primula rosea*, *P. japonica*, and *Caltha palustris*. *Carex longifolia*, *C. japonica*, *C. Grayi*, and *Cyperus longus* all grow well either in the water or on the bank; in either position they are effective. The species of *Pinguicula* grow in damp, boggy places. *Acorus calamus* (Sweet Flag) has aromatic foliage, and will grow either in water or on the banks where it can reach the water. *Funkias* are at home on the banks of streams, where they grow luxuriantly. *Lysimachia clethroides*, with its pretty white flowers, is an attractive subject during August and September. *Osmunda regalis* and its many varieties do well in the water garden and make stately plants. *Rodgersia podophylla* is an attractive plant, producing large, peltate leaves. *Lythrum roseum superbum*, with its bright rosy flowers, is very showy in August and September. *Gentiana asclepiadea*, with its arched branches of deep blue flowers, are attractive, and the beautiful *Gunnera scabra* is also imposing, especially when the red leaf stalks are prominent. *Gunnera magellanica* and *G. monoica* are small growing species. *Primula sikkimensis* is also well adapted for a cool, damp spot; when in flower the plants are very conspicuous. *Sarracenia purpurea* and its varieties are elegant types for the bog garden or waterside, as also are the Cobra-headed *Darlingtonias*, these being attractive all the year round. *Drosera longifolia* and *D. rotundifolia* are effective when planted in clumps between the *Darlingtonias*. Other elegant plants are *Saxifraga peltata*, which will grow to large dimensions, and various species of *Bambusa*, such as *B. Veitchii*, *B. Metake*, *B. palmata*, and *B. flexuosa*. *W. A. Cook, Leonardslee Gardens, Horsham, Sussex.*

RHEUM INOPINATUM.

THIS attractive little species from the Himalayas is quite distinct from most members of the Rhubarb family, which are all more or less of a coarse-growing and vigorous nature. While species like *R. palmatum* and others often attain a height of 8 feet or more, the maximum height of *R. inopinum* is seldom more than 2 feet. It also belongs to that section of the genus, some species of which have few or no leaves on the stem. The grey-green, wrinkled leaves are from 6 inches to 9 inches long, and nearly as wide, borne on red-purple coloured petioles, about 6 inches long. They form a tuft of foliage, from amongst which the bright-red or crimson inflorescence is produced. Quite a succession of stems is produced, and the plant remains attractive for the whole of the summer months, the fruits being equally highly coloured. It is perfectly hardy in the open border, and seeds are freely produced. Seeds of *R. inopinum* were collected by Capt. H. J. Walton, at Gyantse, in Tibet, in September, 1904. Some were received at Kew, and plants flowered for the first time in July, 1905. The illustration (fig. 164) shows a two-year old plant grown from seed ripened here. Another dwarf-growing species from the same region is *R. acuminatum*, which is said to be the common Rhubarb of the Sikkim Himalaya. Like the above species it is found at high elevations, and seldom exceeds 3 feet in height, with deep red-purple stems and inflorescence. Both of these make interesting border plants, but while *R. inopinum* is perennial the other usually dies after flowering. *R. inopinum* is figured in the *Botanical Magazine*, tab. 8189. *W. L.*



FIG. 164.—RHEUM INOPINATUM AT KEW.

[Photograph by W. Irving.]

plants are at home on the water's edge, and they are best grouped several crowns together, say a few yards apart. They will attain their maximum size about three or four years after planting. *Primula rosea* and *P. japonica*, if planted in masses between the *Gunneras*, provide a display of flowers in the spring. One of the prettiest sights in the water garden at Leonardslee has been afforded by *Spiræa arifolia* as a background with a broad batch of *S. palmata* in front. Other *Spiræas* suitable for the water garden are *S. japonica*, *S. astilboides*, *S. gigantea*, *S. compacta*, *S. multiflora*, and *S. Davidii*. These all do remarkably well on the water edge. *Liliums* are effective, and such species as *L. Ansonii*, *L. superbum*, *L. pardalinum*, and *L. croceum* do well on the water

Aponogeton distachyon is a perfect gem as a water plant, the white flowers being set off with purple anthers and scented like Hawthorn.

Calla palustris, the Water Arum, has pretty white flowers, which grow about 6 inches or 7 inches above the water. *Menyanthes trifoliata*, the Bog Bean, is a free-growing plant, the pink fringed flowers resembling those of the Horse Chestnut. *Myriophyllum proserpinacoides* (Green feather) has very pretty cut leaves. *Butomus umbellatus*, the Flowering Rush, has stately inflorescences of pink heads, set off by the Rush-like foliage. *Sagittaria japonica* produces large, white flowers, which rise about 18 inches above the water. There is a double form called *S. japonica fl. pl.*; this is wonderfully attractive and easy to grow. *Hottonia palustris*,

COLONIAL NOTES.

ADANSONIA DIGITATA (BAOBAB TREE).

I HAVE just read in the *Kew Bulletin*, No. 3, 1910, p. 98, an interesting article entitled "Baobab Trees Used for Storage of Water," and, as I did so, it occurred to me that a note from Tobago on this same tree may be of interest to some readers of the *Gardeners' Chronicle*. In the neighbourhood of Scarborough (the capital of the island) there are a few large specimens which flower and fruit regularly and freely. The shell of the fruit is hard and gourd-like in form. In the island of Grenada—and, so far as I know, in Trinidad too—the fruits never mature. Here they ripen, and are known as "Guinea Tamarind;" I am informed that the ripe fruits are sent to Trinidad for sale, the dry, pulpy substance in which the seeds are embedded being eaten.

CASSIA JAVANICA.

FOR several weeks past two trees of this magnificent member of the Leguminosae have been flowering in the Botanic Gardens of Tobago. Here it is known as the "Apple-blossom Cassia," reminding those of us who remember the Apple orchards of England of blossoming time. The upper parts of the branches, for many feet in length, are clothed with beautiful and fragrant flowers. A small plant of this same Cassia was planted on Arbor Day (November 9) last year at the foot of Burnett Hill, Scarborough, where it has thriven in a satisfactory manner. One or two of our chief planters are placing dozens of it around the outskirts of their Cocoa estates. I am indebted to the kindness of the Director of the Royal Botanic Gardens, Kew, for identifying the plant under the name *Cassia javanica*; it is known here as *C. marginata*. W. E. Broadway, Tobago.

The Week's Work.

THE ORCHID HOUSE.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Birtford, Surrey.

Schomburgkia.—Plants of the warm-growing section of this genus which have cylindrical pseudo-bulbs as *S. tibicinis*, *S. Humboldtii*, *S. Sanderiana*, *S. Thomsoniana*, *S. Kimballiana*, *S. chionodora*, and its variety *rosea*, should be raised well up to the roof glass of the hottest house. When growth is completed, light sprinklings of water on the surface of the soil will be all that is required for several months to come. Those of the fusiform section as *S. Lyonsii*, *S. undulata*, *S. rosea*, and the winter-flowering *S. crispa* do not require nearly so much heat, the Cattleya house and Cattleya treatment being alike suitable for them. *S. Humboldtii*, owing to its scant habit, does best when fixed to a block of wood, or teak raft. Whilst making its growth, the plant should be well syringed overhead several times a day, but when at rest one watering a day is sufficient. The other species enumerated thrive well when potted very firmly in well-drained *Osmunda* fibre. The best time for repotting is soon after growth commences, or just when new roots are making their appearance.

Cypripedium.—The warmth loving *Cypripediums* are now growing very freely, and may still be lightly sprayed overhead two or three times a day when the weather is bright, and the temperature sufficiently high, but the long, flat-leaved species as *C. Stonei*, *C. laevigatum*, *C. Parishii*, *C. Lowii*, and *C. Rothschildianum*, though requiring plenty of water at the root, should not be damped overhead in winter, as water is apt to settle in the growths and cause decay. Any of these *Cypripediums* on the shady side of the East Indian house which have become pot-bound may be repotted at this season. They grow vigorously in well-drained pots, and in a mixture of equal parts of fibrous loam, *Osmunda* fibre, and Sphagnum-moss. Care must be taken to mix plenty of small crocks with the material, as the plants when in full growth require an abundant supply of water. Many of the cooler-growing species and hybrids are now in bloom or developing their flowers; in the case of large specimens,

see that spikes are not being bent down by the heavy foliage. Afford the plants plenty of water at the root till the flowers open, when the quantity should be considerably reduced.

Intermediate house.—Plants of *Masdevallia tovarensis* are now sending up their pure white flowers, which appear well above the dark green foliage. Keep the plants in the coolest and shadiest part of the house, and the flowers will last in good condition for many weeks. When vaporising the house with the XI-All compound, it is advisable to remove the plants to another house, as the fumes often turn the tails of the flowers to a pinkish hue. At this season every care should be taken in watering this *Masdevallia*, as too much water at the root, if only for a short time, will cause many of the leaves to decay at their base and fall off. Plants of *Odontoglossum pulchellum*, *O. platycheilum*, and *O. Londeboroughianum*, having finished their growth, should be placed in a somewhat dry, light position in this house, affording them only just sufficient water at the root to keep the pseudo-bulbs plump. Any plants of *Zygopetalum maxillare* and its variety *Gautieri* that have started to grow and need fresh material, should now be given attention. This plant is invariably imported upon pieces of Tree Fern, and when the new growths are likely to exceed the length of the Fern block, we simply wire another piece of Tree Fern on the top of the old one, and the plant, if vigorous, soon takes hold of the added portion. Suspend the plant in a shady part of the house, keeping each growth perfectly clear of small yellow thrips, and never let the block get in the least dry.

Cool house. Now that plants of *Odontoglossum Uro-Skinneri*, *O. biconense*, and *O. B. album* are growing fast, they may be potted if necessary, and it is essential to their well-being that the potting material of *Osmunda* and Sphagnum-moss be made thoroughly porous. These species should be placed at the drier and warmer end of the house.

THE HARDY FRUIT GARDEN.

By A. K. SEARLE, Gardener to the Marquis of Northampton, Castle Ashby, Northamptonshire.

The Fig.—In gardens where severe frosts are usually experienced, the branches of the trees should be unfastened from the wall and tied together in bundles of a convenient size. This will allow them to be readily protected with Bracken Fern, straw or mats. See that each bundle is fastened securely to the wall, otherwise the wind may cause them to be chafed in rubbing against each other.

Bush Fruits. Bush fruits are easily propagated from cuttings, and it is a good plan to insert a few shoots of the best varieties each season. By doing so a supply of young bushes will be always available for filling any gaps caused by dead trees or to replace old and worn-out specimens. It must be remembered that young bushes produce much the finest fruit, and it is not advisable to retain old specimens that are deteriorating. In the case of Red and White Currants and Gooseberries, select as cuttings young shoots of medium strength, making them about 12 inches in length. Remove with a sharp knife all the buds, with the exception of three or four at the upper end. This will cause the plant to make a "head" on a clear stem, and prevent the formation of ground suckers. In planting the cuttings, make a trench about 8 inches deep, placing some old potting soil at the bottom. Plant the base of the shoots in the added mould, and then fill in with the ordinary soil, making it firm as the work proceeds. Black Currants may be propagated in a similar manner except that no buds are to be removed, as it is desirable to encourage the development of as many basal growths as possible, so as to permit of a certain quantity of the old wood being removed annually, as the Black Currant fruits on the young wood. If it is desired for any special purpose to train the Black Currant with a stem, adopt exactly the same system as advised for the other sorts.

General work.—When the ground is hard with frost, take advantage of the time to wheel manure to the fruit quarters, placing it in convenient heaps ready for spreading beneath the trees when pruning is finished, and the ground cleared of the rubbish. Newly planted trees should have the permanent labels attached before the writing on the paper talies is obliterated by rain. Fresh

labels may, where they are needed, also be attached to the other trees. The work of preparing the labels may be done indoors when the weather is too inclement for outside operations. Metallic labels, with raised letters, are the best for the purpose, as they are practically indestructible.

THE KITCHEN GARDEN.

By JOHN DUNN, Kitchen Garden Foreman, Royal Gardens, Windsor.

Cauliflowers.—Cauliflower plants potted a month ago, standing in cold pits, should be allowed all the ventilation possible. The lights may be removed during the day and replaced again at night, leaving them open a few inches at the top in order to promote a sturdy growth. Afford water carefully, or the plants will become too succulent to withstand the cold of winter. There is yet time to pot up young seedling Cauliflowers for planting in April. If they are potted moderately firmly in good, rich loam they will fill the pots with roots, and provide a valuable successional batch to those potted a month ago.

Broad Beans.—If an early supply of this vegetable is desired a small sowing may, provided the ground is in a fit condition, be made without delay. This sowing should be made in a sheltered part of the garden, where the soil is not too heavy; for, although the Broad Bean succeeds best in a somewhat heavy soil in summer, it would not be advisable to sow them in such a medium now. If the ground has been trenched and manured in readiness, the seed may be sown in rows 3 feet apart, and covered with 3 inches of soil. Some seeds should be sown in a box at the same time, and placed in a cold frame for the purpose of providing plants for filling any gaps in the rows.

Chicory.—The crowns may be lifted now and placed in the forcing pit or Mushroom house, where it is perfectly dark. A temperature of 55° is sufficient to force Chicory. A damp, stagnant atmosphere must be avoided or the young growths will soon decay. If a small quantity only is required, Chicory may be grown in pots in the same manner as Seakale. Six good crowns will be sufficient for each 8 inch pot. Make the soil moderately firm, leaving about 1 inch of the crown uncovered. When growth commences a pot of the same size may be placed over the crowns in an inverted position. If the soil is in a moist condition at the time of potting little or no water will be necessary, but if the soil is dry, a good watering should be given as soon as the potting is finished. Dandelion may be lifted and forced in the same manner as advised for Chicory.

Lettuce.—Young Lettuce plants growing in cold pits, and intended for planting out in the spring, should be afforded fresh air freely to keep them from damping. All decaying leaves should be removed, and the soil amongst the plants stirred with a small hoe, when a sprinkling of lime or dry ashes should be applied as a precaution against damping and a deterrent to slugs.

Early Carrots in pits.—Where pits are available, a sowing of Carrots should be made in the early part of December. No fire heat is necessary for this crop, however severe the weather may be, provided a bed of fermenting material is placed in the pit. Leaves make the best hot-bed for this purpose, the heat from them being more lasting and of a milder nature than when manure is employed. When the leaves have been collected and allowed to remain for ten days, they may be turned, placed in the pit, and trodden tightly together, leaving the surface as even as possible. Place a 9 inch layer of soil over the bed; loam which has been removed from a Melon house is suitable. The soil should be made moderately firm and level with a wooden rake previous to sowing the seed, which may be done either in drills, made 4 inches apart, or broadcast. Some growers sow Lettuce and Radish with this crop, but this is not advisable. During periods of severe frost, a covering of Fern or some other protective material should be placed over the pit in sufficient quantity to exclude the frost. Early Scarlet Horn is still one of the best varieties for this sowing. Other good sorts of Carrot for frame culture are Parisian Forcing and Early Gem. As soon as the young plants appear slugs must be guarded against, and, if necessary, a sprinkling of lime applied.

PLANTS UNDER GLASS.

By JOHN DONOGHUE, Gardener to JOSEPH PIERKESGILL, Esq., Bardon Hill, Westwood, Yorkshire.

Bougardia.—The earliest batch of *Bougardias* will soon have passed their best flowering stage; the flowering shoots may be shortened somewhat and the plants transferred to a moist, warm atmosphere. Let them be given alternate waterings of liquid manure from the farmyard and some approved chemical fertiliser, and they will flower freely again early in spring. If the plants have been attacked by aphid or red spider, these pests may be thoroughly eradicated by syringing occasionally with insecticide, and fumigations with a nicotine compound.

Anthurium Scherzerianum.—The brilliant, scarlet spathes of *A. Scherzerianum* are exceedingly decorative in the short, winter days, and are useful for mixing in cut flower arrangements, as they are capable of lasting in good condition for a considerable period after being cut. In order to get the best plants for flowering in winter, the cultivator should either propagate them by cuttings early in spring, or seedlings should be raised in the previous autumn. The plants require considerable heat and a moist atmosphere throughout the growing season, and such spathes as show themselves should be removed early until about the month of September. In that month, the plants should be transferred to a house in which the conditions are somewhat drier, and ventilation should be afforded on all favourable occasions in order to keep the spathes dry.

Anthuriums with ornamental foliage.—Fine foliage species and varieties of *Anthurium* should be given a season of rest by slightly reducing the atmospheric temperature, but not lower than 60°. The roots may also be kept somewhat drier during the winter.

Euphorbia (Poinsettia) pulcherrima.—The plants of this species have almost completed the development of their brilliantly coloured bracts. The grower must take great pains not to apply more water than the plants require, as any excessive moisture at the roots at this season will cause loss of foliage. The use of artificial manures should be discontinued, but occasional waterings with clear soft water will be beneficial. The growths of *Poinsettia pulcherrima* are sometimes cut for use with other cut flowers for table decoration. In such cases the plants must not suffer neglect afterwards, but, on the contrary, they should be placed near to the glass in full light, and the water supply lessened gradually in order that the plants may mature. Later the stems may be shortened, and when this has been done the plants should be stored in a dry position, where the temperature will not fall below 55°.

Propagating Chrysanthemums.—In gardens where numbers of *Chrysanthemums* are cultivated for exhibition purposes it is time to commence to propagate the late-flowering varieties. Speaking more particularly for the northern districts, there is great difficulty in securing second crown buds from plants which are rooted later than the first fortnight in December. For propagating, a shallow box should be placed in a cool greenhouse or frame, where frost can be excluded. Loose pieces of glass should be placed over the top of the box to prevent drooping until the cuttings have formed roots. The pieces of glass should be reversed each day, placing the dry side next to the cuttings. Cuttings should be selected from the free-growing shoots at the base, say, shoots 5 or 6 inches in length, and utilising the first 3 inches for forming the cutting. Stem cuttings are not advisable, as they flower prematurely. If they are available, thumb pots should be used, keeping the cuttings singly in the pots close to the edge, and taking care that the base of the cutting rests firmly upon the soil in the pot. As soon as the cuttings are seen to be making growth they should be accustomed gradually to increased ventilation and light before they are removed from the case. They should be kept growing steadily through the winter until it is safe to transfer them to cooler pits or frames. It is desirable to examine the cutting pots at intervals of a week or so in order to repot any of the stronger growing varieties before the general repotting into large 60-sized pots is carried out. The cuttings and plants generally must be kept free from Aphides by frequent syringing with a weak insecticide.

FRUITS UNDER GLASS.

By B. GOODACRE, Gardener to Sir LESTER CASSETT, G.C.B., Moulton Paddocks, Newmarket.

Forcing of Strawberry.—To obtain ripe Strawberries early in the new year, a batch of plants may now be started, preferably such plants as are in 5 in. pots. Select strong, well-rooted plants, with prominent crowns, and give the roots a good soaking with lime water. When they have drained, prick up the surface soil, and lightly top-dress the plants with a little fresh compost. About a week before selecting the plants, a hot-bed should be made up. Mix two parts leaves to one of horse manure, and after allowing time to sweeten, tread the mixture into a frame to a depth of 2½ or 3 feet. Plunge the plants to the pot rims in the hot bed, keeping them within 6 inches of the glass. Care must be taken that the bottom heat does not become excessive, otherwise the roots will suffer. The atmospheric temperature of the frame may range from 50° to 60°, admitting air whenever the conditions are favourable. It will be necessary to admit air at the higher end of the lights for some time when the bed is new, to allow the ammonia fumes to escape. On bright days, a gentle spraying with tepid water will be beneficial, but regular syringings are unnecessary, and they do more harm than good when the weather is dull and cold. Under the influence of the bottom heat, new leaves will develop, and when the flower spikes can be seen the frame may be kept at about 55° to 60° at night, covering the glass with a mat during severe weather. When the inflorescence is well up, remove the plants to a shelf in some of the early fruit houses where there is an atmospheric temperature of 45° to 45° at night, but do not place them where they are exposed to the draught from the ventilators, this very often being the cause of flowers failing to set.

Tomatoes.—Winter fruiting plants must be kept fairly dry at the root, giving them water only when the soil is dry, but not in such a state as to cause the plant to flag. The atmosphere should also be kept reasonably dry and freely ventilated, the temperature ranging from 55° at night to 65° or 70° by day with sun heat. Endeavour to set the flowers as they open by gently tapping the trellis during the middle of the day, in order to liberate the pollen. Light top-dressings of loam mixed with a little bone meal may be given occasionally as the roots appear on the surface. See that the glass is kept thoroughly clean, so as to admit light. Keep superfluous growth in check, and expose the fruits fully to the sunshine.

Cucumbers.—During frosty weather, a covering of mats, canvas, or even long litter, placed on the roof-glass will be of great assistance in maintaining the required temperature with a minimum amount of fire heat.

THE FLOWER GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Hertfordshire.

Lawns.—Nothing tends so much towards the general good appearance of an establishment as well-kept grass lawns, occupying, as they do, such prominent positions in the near precincts of the mansion. At this season, the grass will be much stimulated by frequent brushings and rollings, the latter when the sward is not too soft. A liberal dressing of either horse-droppings, leaf-mould, or soil, such as old potting material, may also be applied, together with a sprinkling of bone-meal, which will act as a stimulant to the grass during the winter and spring months. Avoid the use of any quick-acting manure at this season, as extra activity at the present time is not needed. If it is necessary to re-level any portion, or lay new turf in places where it has become much worn, such as frequently happens underneath the shade of large trees and where there has been much traffic, this work should now be taken in hand. Before placing the new turves in position, spread a little new earth on the ground, raking it to a fine tilth. Many people think that fine, grassy turf is absolutely necessary, but such is not the case. Good strong growing turf, as cut from a pasture meadow, will serve well enough, and though this may look unsightly for a time, upon the eradication of the weeds in spring, it will make an excellent seed-bed. It should then be treated with finely-sifted soil, and some good lawn mixture sown. Make

the new material thoroughly firm, and place some protection to prevent persons from walking over it. Where there are grass borders to paths and drives, it frequently happens that, owing to the use of the edging tool, these lose their shape. In such cases the proper width should be measured, and pegs inserted, and the verge brought out so far as, when trimmed off, to be of the proper width. Fresh turf is laid in the intervening space, and made thoroughly firm, after trimming off the rough grass with a pair of hand shears.

Trees and shrubs.—The weather has been fairly favourable for the work of planting. For the removal of good-sized specimens, a trench should be worked round, and an attempt made to secure the roots intact with a good ball of earth. Take the greatest care of fibrous roots that project beyond the ball, by tying these back. For removing the tree, we use a strong wooden trolley on rollers. When the roots are sufficiently undermined, the edge of the trolley is placed underneath the ball and the edges supported with stout planks until the roots are free, when they are matted up and hauled on with ropes, and tied secure. Planks are placed under the rollers in a slanting position, for the whole thing to be hauled out; the tree can then be removed to any distance with absolute ease. Should the soil be so light and dry that a ball cannot be secured, I would suggest that the wood be pruned severely, as, when the sap rises, it will cause increased activity at the base. Make all specimens thoroughly secure by staking or supporting them by wires, securing these to the stem over some soft material such as sacking, and to stout pegs in the ground. Always plant the heaviest side of the tree to the west, as from this quarter we usually get the strongest winds. The present affords a good time for overhauling stakes and ties on all shrubs and trees. The new form of tree ties that I introduced have much to recommend them. Before, we used to lig or spoil many promising young trees, owing to their leaders becoming cut into, by tying with string, but these newer ties, owing to their width, held securely and effectively, until, in the course of time, they become rotten.

THE APIARY.

By CHLOEUS.

The Isle of Wight Disease.—This disease has made its appearance in England, and as its symptoms are not well known, it will be well to describe it in some detail. The disease destroyed nearly all the bees in the Isle of Wight in 1906, hence its name in this country. On the Continent it is known as the "May Pest," because it often makes its appearance during the month of May. About 60 years ago, following the cold and wet springs, this epidemic attacked nearly all the apiaries of west-central Europe, leaving probably less than 20 per cent, uninjured. From this it will be seen it is not an unknown disease. The bees, on being attacked, run about the alighting board in a very unnatural manner. They do not attempt to fly, and may often be seen falling to the ground, there to creep about until they come to blades of grass, up which they creep, and from thence attempt to fly, only to fail. The number of bees on the ground increases as time goes on, and every blade of grass within a square yard of the hive has one or more bees on it. When evening comes, they form clusters for warmth. If the nights are cold, they die. Some who have studied the epidemic very closely say that the pollen has been injured by the frosts occurring at this time of the year, and this, together with fermented food made from poor sugar, has brought about the disease. If the abdomen of the infected bees is carefully examined, it will be noticed that it is slightly enlarged, and in it will be found, at the end of the large intestine, a small ball of imperfectly-digested pollen.

How to treat it.—Generally speaking, it will be well to destroy all colonies that are suffering from the epidemic, and then cut out all combs and burn them, too. The frames and hives should then be thoroughly washed in boiling water, using carbolic soap. When dry, and after standing in the fresh air, the whole should be painted with a solution of Calvert's No. 5 carbolic, using one-half the quantity of disinfectant as water. The hives and frames may then be safely used for swarms or stocks purchased.

EDITORIAL NOTICE

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Special Notice to Correspondents.—The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

Letters for Publication, as well as specimens of plants for naming, should be addressed to the EDITORS, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editors to see.

APPOINTMENTS FOR DECEMBER.

THURSDAY, DECEMBER 1—
K.H.S. Colonial Fruit and Vegetable Exhibition (3 days).
SATURDAY, DECEMBER 3—
Soc. Franç. d'Hort. de Londres meet.
TUESDAY, DECEMBER 6—
Roy. Hort. Soc. Coms. meet. Scottish Hort. Assoc. meet. British Gard. Assoc. Ex. Council meet. National Vegetable Society Annual Meeting.
MONDAY, DECEMBER 12—
United Hort. Ben. & Prov. Soc. Com. meet.
WEDNESDAY, DECEMBER 14—
Nat. Chrys. Soc. Conference & L.A.H. at Essex Hall, Strand.
SUNDAY, DECEMBER 25—
Christmas Day. Quarter Day.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich—41°.

ACTUAL TEMPERATURES:—
LONDON.—Wednesday, November 23 (6 p.m.): Max. 41°; Min. 27°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, November 24 (10 a.m.): Bar. 30.1; Temp. 42°; Weather—Dull.

PROVING.—Wednesday, November 23: Max. 53 Cornwall; Min. 32° Hud.

SALES FOR THE ENSUING WEEK.

MONDAY, TUESDAY, WEDNESDAY, THURSDAY, AND FRIDAY—
Dutch Bulbs, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 10.30.
TUESDAY—
Special Sale of Roses, &c., at 12.30; Palms and Plants, at 5, at 67 & 68, Cheapside, E.C., by Protheroe & Morris.
WEDNESDAY—
Miscellaneous Bulbs, &c., at 12; 2,247 cases Japanese Liliums at 2.30, at 67 & 68, Cheapside, E.C., by Protheroe & Morris.
FRIDAY—
Established Orchids from the late Mr. Drewett O'Drewett's Collection, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

The lecture by Mr. Pettigrew at the Horticultural Club on Tuesday last called attention to the many and varied directions in which the public parks of this country are made to serve the interests of those who dwell in densely-populated districts. Notwithstanding all that has been written on the subject, it may well be doubted if the important part which the parks play in the social welfare of large towns and cities is realised perfectly by those for whose benefit they exist. That they do, in some vague and indirect way, contribute to the general health of the localities immediately surrounding them is admitted, while the demand for dwellings in their vicinity is, in itself, a striking testimony to their popularity as residential neighbourhoods. Beyond this general appreciation, however, the average householder seldom goes: contenting himself with numbering public parks among the amenities of town life.

With the definite knowledge that fresh air and sunlight are potent antidotes to certain forms of disease, the public park is shown to be an institution of a definite and high value. In the future, a public park sys-

tem will be considered as necessary in town development as a proper scheme of drainage.

In addition, moreover, to their special value in the direction indicated, the parks provide means of out-door recreation which may be enjoyed by the community at large, and Mr. Pettigrew laid emphasis on this branch of the subject. At the present day, most towns provide facilities, according to their several powers, for bowling, tennis, cricket, golf, football, boating, fishing and swimming.

This fact does not make the parks any the less horticultural in their main character. On the contrary, it may be said that in many towns the extended provision for games in the parks has been accompanied by a corresponding increase in their horticultural attractions. We recognise, in common with all intelligent people, that a public parks department is primarily a horticultural institution, and we have frequently devoted space in these columns to articles dealing with the special work which superintendents are called upon to carry out in parks, believing, as we do, that the narration of the experiences of those charged with responsibilities in some of the principal towns is a means of encouraging others to put forth their best efforts for the development of the proper ideals over the whole country. In this connection, we are pleased to note that Mr. Pettigrew made it perfectly plain that the major portion of the work carried on by a public parks department is of a purely horticultural character, and, that the most attractive features of a park in the appreciation of the general public are just those things which are the recognized work of a trained horticulturist. It is the flowers, the green sward, the trees and shrubs, the arrangement of colours, and the wild woodland which constitute the irresistible attractions of public parks.

There is, however, much to be done before the full possibilities are realised. The superintendents require greater experience with trees and shrubs in order that other species may be added to the number in general cultivation. We are not satisfied that the parks in London and elsewhere present that variety which recent introductions have rendered possible. There is often too much repetition of the commoner shrubs and too little diversity in the flower garden. Like most other people, gardeners are apt to become copyists in the sense that they imitate one from another certain features which have commended themselves to their taste, with the result that one park is too nearly like another. In London, for instance, where numerous parks are under the control of one authority—for example, the London County Council—it should be possible to so develop particular features in different parks as to give to each a special value and distinction. But this result cannot be obtained if the several superintendents work entirely independent of each other and unaided by informed initiative from headquarters. It requires a scheme, drawn up with great care, by a chief officer possessed of horticultural knowledge and experience. In this scheme, each park would form a unit related to and depending upon all the other units constituting the park system. In some of these respects London, if it would, might learn much from Glasgow, where Mr. Whitton is doing such excellent work. Moreover, in relation to the de-

velopment of the parks it is important to devise means of raising the standard of the gardeners employed in them. The art of cultivation is a progressive art, and one which requires all the abilities of the best men obtainable. Much experience and considerable study are essential for the production of such men, and the rewards offered the gardeners in the shape of salaries and opportunities for advancement ought to be such as will compensate them for the time and labour expended in the acquisition of these qualities. At present, in London, and also in certain provincial towns, few or none of the conditions which we have laid down are fulfilled. The chief officer is only too often appointed by reason of qualities of secondary importance. The superintendents are isolated instead of being united, and the gardeners are, in not a few instances, but ill paid. Mr. Pettigrew deserves the thanks, not only of gardeners, but of the whole community, for drawing attention to the great and as yet inadequately realised possibilities for improvement and extended usefulness which our public parks present.

OUR SUPPLEMENTARY ILLUSTRATION.—Our issue for August 13 last contained a descriptive note, with illustrations, of the Earl of Onslow's charming gardens at Clandon Park, Surrey. Reference was then made to the water-garden and Lily pool, and the choice perennial plants which ornament the banks of the water. In the present Supplementary Illustration is shown a view of the Lily pool with most of the plants in flower. Between the pool and the Maori Council House can be seen a fine specimen of *Gunnera manicata*. The picture is one that should inspire others to obtain for their own gardens the beautiful effects that peculiarly belong to aquatic flowering plants.

FLOWERS IN SEASON.—Messrs. H. CANNELL & SONS, Swanley have forwarded some pretty varieties of single Chrysanthemums, a selection of "collarette" Dahlias and blooms of their salmon-coloured sport of Paul Crampel Pelargonium. The Chrysanthemums include the varieties Red Start (red), Honeysuckle (white), Golden Pagram (yellow), Miss Janet Curtis (rose-pink), and Mrs. F. A. Collet (bright terra-cotta).

ROYAL AGRICULTURAL.—A horticultural exhibition will be held in conjunction with the society's meeting at Norwich next year. The dates are fixed for June 27 to June 30. The schedule includes some 25 classes, of which half the number are open to all comers. The most important class is for a group of miscellaneous plants arranged on a space of 350 square feet. Three prizes, of the value of £30, £25, and £20, are offered. There are also classes for Orchids, Carnations, Begonias, herbaceous flowers, Roses, Sweet Peas, vegetables, and fruit. The arrangements of the horticultural section are under the management of Mr. PETER BLAIR, Trentham Gardens, Stoke-on-Trent.

LINNEAN SOCIETY.—The next general meeting of the Society will be held on Thursday, December 1, at 8 p.m. Exhibitions:—1, Mr. G. C. DRUCE, *Utricularia ochroleuca* and *U. Bremii*, from Ireland, and *Cherophyllum aureum* and *Arabis alpina* from Scotland. 2, Miss IDA M. HAYWARD, aliens introduced into Tweedside with foreign wool. Papers:—1, Capt. C. F. U. MEKE, "Spermatogenesis in *Stenobothrus*." 2, Dr. OTTO STAFF and others, "Reports on the International Congress of Botanists held at Brussels in May, 1910."

SOUTHAMPTON CHRYSANTHEMUM SHOW.

In addition to the non-competitive groups mentioned in our report of this show on p. 380, a group of stove and greenhouse plants was exhibited by the Hon. Mrs. ELIOT YORKE, of Hamble Cliff (gr. Mr. G. T. Turner), and received the society's Gold Medal. A collection of Palms and other decorative plants was shown by the President, Lord SWAYTHLING (gr. Mr. T. Hall), the group being awarded a Silver Medal.

WOLVERHAMPTON HORTICULTURAL CLUB.

Mr. J. F. SIMPSON having resigned the position of honorary secretary of this club, Mr. ALFRED DOBES (Messrs. TOM B. DOBBS & Co.) has undertaken the duties till the end of the year, at the unanimous wish of the members.

MR. T. E. HENWOOD.

The honorary secretary and treasurer of the National Carnation and Amicula Societies, Mr. T. E. HENWOOD, having reached his twentieth year of office, it is proposed to present him with a suitable testimonial at the joint annual meeting of these societies. The preliminary list of subscribers includes Mrs. Martin R. Smith, Sir John T. D. Edwellyn, and Messrs. Leopold de Rothschild, H. R. Taylor, Robt. Morton, G. H. Lawrence, F. W. Price, Walter Shipman, J. J. Sheldon, W. Lightbody, J. Sargeant, J. Douglas, Sen., J. Douglas, Jun., and William Smith. Subscriptions may be forwarded to Mr. JAMES DOUGLAS, Jun., Ednam, Great Bookham, Surrey.

PRESENTATION.

Mr. G. BRISTOL has been appointed farm bailiff to Mrs. LAMBERT, of the Manor House, Effingham, Surrey, after serving for many years as gardener to the late Mr. CHARLES E. LAMBERT. To mark the 20th anniversary of his service with the family Mrs. LAMBERT has made him a suitable presentation. Mr. BRISTOL is a member of the Effingham Parish Council, and takes an active interest in the men's club.

PRESENTATION TO MR. J. UDALE.

On Saturday, the 19th inst., Mr. UDALE, horticultural instructor for the county of Worcestershire, was presented with a silver epergne by school teachers who have attended his courses of instruction in horticulture during the past three years. During 1910, 40 teachers have attended the course of instruction provided by the county council at the County Experimental Gardens, Droitwich. At the end of the season an informal examination is held and certificates of proficiency granted, according to merit.

"THE BOTANICAL MAGAZINE."

The issue for November contains illustrations and descriptions of the following plants:—

XERONEMA MOORII, tab. 8342. This member of Liliaceae develops a striking inflorescence of red-dish-purple flowers, the flower-bearing portion assuming a sub-horizontal direction. All the flowers are borne erect on the upper surface of the rachis. The long ensiform leaves have a character like those of some Irises. The plant is a native of the mountains of New Caledonia, growing at elevations of from 3,000 to 5,000 feet. The flowering season is June.

PLEIOCARPA MUTICA, tab. 8343. This stove plant bears axillary, many-flowered globose clusters of blooms; and opposite, elliptic or oblong leaves. It forms a shrub about 5 feet high. The species is found wild in the Cameroons, where it was discovered by Mr. G. MANN. It is also met with in Old Calabar, from whence it was introduced to European gardens. The plant needs a similar treatment to that afforded *Ixoras*: it makes a handsome subject when in flower, the beautiful white blossoms being produced in profusion.

COLUMNEA OERSTEDIANA, tab. 8344.—In common with most Gesnerads, this species of *Columnea* bears strikingly handsome flowers. According to the description in the text they are pink coloured, but the illustration shows them a full red. The species is a native of Costa Rica,

the same region in which the beautiful *C. magnifica* was discovered. A plant of *C. Oerstediana* flowered in Colonel BEDDOME's garden at Putney, and supplied the material from which the plate was prepared.

PYRACANTHA ANGUSTIFOLIA, tab. 8345.—*Pyracantha angustifolia* was introduced to cultivation by Mr. M. L. DE VILMORIN, seeds having been sent to that gentleman by SOULIÉ from Eastern Tibet, in 1895. The species is apparently best suited for gardens in favoured districts as, although plants at Kew have survived the winter, they require a long spell of sunny weather to perfect their crop of bright orange-coloured berries. It would probably succeed on a sunny wall, but is hardly likely to be of such value as some of the species of *Crataegus* and *Cotoneaster* as a wall plant. In Mr. DE VILMORIN's garden on Les Barres the original plant develops a plentiful crop of berries, which colour well in the autumn. A specimen in the garden of Torquay, supplied the materials from which the illustration in the *Botanical Magazine* was prepared. The flowers are whitish and produced in corymbs.

HOULETTIA SANDERI, tab. 8346.—This species was described by Mr. ROLIE in *Gardeners' Chronicle*, 1910, vol. xlvii, p. 206, and it is nearly allied to *H. Lowiana*. The species was imported from Peru by Messrs. SANDERS & SONS, St. Albans.

"THE ORCHID WORLD."—The November number, the second issue of this new Orchid periodical, edited by Mr. GURNEY WILSON, is to hand. One of its attractions is a note on Walton Graze and its Orchids, with a fine portrait of the owner, Mr. WILLIAM THOMESON. A well illustrated article on *Phaleopsis*, illustrations of Sir GEORGE L. HOLFORD's fine *Cypripedium Shogun* and of Mr. E. V. Low's *Cypripedium King George V.* are also given, together with other interesting subjects.

PUBLICATIONS RECEIVED.—*Carnations, Picotees, and Pinks*, by T. W. Sanders, F.L.S. (London: W. H. and L. Collingridge.) Price 2s. 6d. net.—*Monmouthshire Education Committee: Report of the Director of Agricultural Education*, July 13 and October 19.—*The Chaim of Gardens*, by Dion Clayton Calthrop. (London: Adam and Charles Black.) Price 7s. 6d. net.—*The Estate Magazine*, November, 1910. (London: Spottiswoode & Co., Ltd.) Price 6d.—*Royal Botanic Gardens, Kew: Bulletin of Miscellaneous Information*, 1910. (London: Darling & Son.) Price 1d.—*Plant Animals: A Study in Symbiosis*, by Frederick Keeble, Sc.D. (Cambridge: University Press.) Price 1s.—*Weather Instruments and How to Use Them*, by D. W. Horner. (London: Witherby & Co., High Holborn.) Price 6d.—*The Journal of the Board of Agriculture*. November, 1910. (London: R. Clay & Sons, Ltd.) Monthly. Price 4d.—*The British Fern Gazette*, edited by Charles T. Druery. December. (Kendal, Westmorland: The British Pteridological Society.)

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

FLOWER SHEATHS OF LÆLIAS AND CATTLEYAS.—Mr. White, in his notes upon Orchids (see p. 373), recommends growers to "see that the old flower-sheaths are cut off close down to the apex of the pseudo-bulb." May I venture to suggest a little dodge, which here we find most effective, and, I think, simpler than cutting? When about to pluck a *Lælia* or *Cattleya*, take the tips of the sheaths between the finger and thumb of either hand, pull them sharply apart, and rather downwards; they will come away quite readily right at the very root of the stalk, where it issues from the bulb. That one of our very largest Orchid growers expressed himself as very much struck with this method when he happened to see me do it one day emboldens me to make the suggestion to the renowned experience of Burford. *John Edwards-Moss, Roby Hall, Torquay.*

LATE PEAS.—In reference to Mr. A. Hough's note (see page 371), I may say that we have gathered several good dishes of Peas during October and up to the middle of November for several years past, from sowings made in the latter part of June. The latest date on which we have picked Peas here being November 19. The varieties on which we rely for late supplies are Latest of All and Autocrat. Although situated in the south, this locality is a cold one. *Wilmot H. Yates, Rotherfield Park Gardens, Alton, Hants.*

ONION CROP.—I have weighed my crop of Onions sown in the open on March 4, and from 4 perch 20 square yards I have 987 lbs. weight of bulbs of average size. The varieties were Long Keeping, Sutton's A1, and Improved Reading. For the above crop 13 ounces of seed was sown, and the thinning cost sixpence. *G. H. H. W.*

SILVER-LEAF DISEASE.—In reference to the interesting article on this disease, which appeared in the *Gardeners' Chronicle* of November 12, mention may perhaps be made of a paper on the same subject, which was read at the recent meeting of the British Association at Sheffield. During the last two years the writer has made observations and experiments in Cambridge-shire with respect to silver-leaf disease, which is particularly frequent in Plum trees, especially Victorias, in this district. The results of inoculation experiments with pieces of spore-phore of *Stereum purpureum*, confirm the statements of Professor Percival and Mr. Spencer Pickering, but so far no silvering has been induced by the inoculation of a healthy tree with the spores alone. So far as I am aware, no previous worker has made inoculations with the pure spores of this fungus. In reference to these apparently negative results, it should be stated that silvering may possibly ensue the next year, by which time the mycelium derived from the spores may have developed vigorously. It has been found possible to grow *Stereum purpureum* in pure culture in artificial conditions; by this means all possibility of contamination by the mycelium will be avoided. Inoculation experiments have already been performed, using mycelium obtained in this way, and the results will be awaited with interest. With regard to the incidence of the disease, one is struck by the large number of regrafted trees which become silvered. A few Gooseberry and Red Currant bushes have been found to be silvered in this district, and of considerable interest is the fact that a fortnight ago I came across a Sycamore, a part of whose foliage was silvered. This tree, present in the midst of a mixed wood, had been cut down, and some of the new shoots arising from the base bore silvered foliage. It is significant that *Stereum purpureum* was found to be growing in abundance on the part of the stump in the neighbourhood of which the affected shoots arose. *F. T. Brooks, Botany School, Cambridge.*

I read with interest the article on Silver-leaf disease on page 356, which stated that Mr. Pickering considers that Silver-leaf is not an incurable malady. In the issue for September 28, 1901, p. 247, you published an account of how I cured this disease in a tree of Lord Napier Nectarine, growing in a glass house, one side of the tree only being affected. I will repeat from memory my treatment. I obtained some liquid manure water from the cow-sheds, and I diluted it with water. In each gallon of the manure-water I dissolved half an ounce of sulphate of iron. I saturated the soil in which the tree was growing with this liquid. This I did three times during the summer, giving also a dressing of air-slaked lime. The next season I was greatly disappointed to find the disease appeared again to about the same extent, but I noticed that the foliage on the healthy portion of the tree appeared finer and of a darker colour than usual. So I repeated the treatment during the second summer by giving the tree three heavy waterings at intervals with the solution. The following spring I was delighted to see only a few leaves affected with the malady. I believe I gave three more waterings with the liquid the third summer, making three years' treatment. I never saw any more disease after that year. The tree was a very old one, being planted about 35 years. It began, this summer, to show signs of decay, so I have replaced it this autumn by planting a younger specimen. *J. Easter, Nostell Priory Gardens.*

APPLE SCAB.—I read with interest the lecture delivered by Mr. Salmon (see p. 358) on "Diseases of Fruit Caused by Fungi." I suppose there is no gardener who is not acquainted more or less with the pest known as the Apple scab or black spot, and who would gladly welcome some cure for it. Professor Salmon has advocated spraying Apple trees with Bordeaux mixture for some time past, and it would be interesting to hear from gardeners who have followed his treatment as to whether they have been successful in combating scab with this specific. In my case I have been unsuccessful; why, I do not know. I sprayed twice, but the fungus is still present, and on some trees as bad as ever. What I cannot understand is that one tree may have its fruit badly infected, whilst the fruit on a neighbouring tree may be free from disease. I notice that the fruits on trees with abundant and healthy foliage are attacked with scab, thus exploding the statement that the disease proceeds from leaf to fruit. I have also observed that the weaker-growing varieties seem more susceptible to an attack of scab. I gathered (to all appearances) some clean and well-grown fruits, and though they were isolated, they have developed the fungus badly in the fruit-room. *P. E. Cornish, Downs House Gardens, Yalding, Kent.*

CHRYSANTHEMUMS IN SOUTHWARK PARK.—The display of Chrysanthemums in this park is very fine this season, and certainly no other park in London can show such uniform quality and excellence of bloom. The Incurved varieties call for special mention, and it may be said without exaggeration that the collection is made up of exhibition blooms. The splendid results that have been achieved are all the more remarkable, seeing that the plants have been cultivated under the least favourable conditions in the neighbourhood of factories. That this phase of gardening is appreciated by the public is shown by the large numbers of people who have inspected the flowers. *Walter H. Appelt, Superintendent, Bermondsey Public Gardens.*

ARUNDINARIA NITIDA.—This very graceful, light, and most distinct Bamboo does not appear to have received the attention that its merits deserve. As a specimen plant, it is one of the handsomest of Bamboos, and it is also one of the hardiest of the race. At Gunnersbury House, for 10 years past, plants have withstood the cold of winter and spring. It is more nearly deciduous than any other Bamboo in these gardens, and I have noticed that it starts into fresh growth sooner than any other sort, yet not soon enough for the young growths to be harmed by frost. It grows freely, but does not spread nearly so much as some other Bamboos. I recommend *Arundinaria nitida* to all who have not yet planted it. *Jas. Hudson, Gunnersbury House Gardens.*

CHRISTMAS ROSES.—It is with the utmost diffidence that I venture to criticise the instruction given by an authority of so much experience as Mr. E. Beckett; but surely one should hesitate before following his advice in the *Chronicle* for November 19 "to give a good mulch of decayed farmyard manure" to Christmas Roses at the present time. Such treatment would utterly mar the chief ornament of the garden at this season. The early *Helleborus niger albidifolius*, the finest of all, has been in full flower for a month past, a mass of the hue of Apple blossom. *H. niger* and the later varieties are just about to flower, the buds being closely set above ground, and mulching would be a sad disfigurement. Given deep cultivation when they are planted, Christmas Roses seem quite indifferent to subsequent treatment; the only thing they demand imperatively is to be let alone. Few flowering plants resent disturbance more obstinately. *Herbert Maxwell, Moncrieth.*

RURAL EDUCATION.—The following letter has been sent to the County Councils Association:—Sir, I am instructed to inform you that this association, while acknowledging the usefulness of the suggestions made by the Rural Education Committee of the County Councils Association with respect to agricultural education in the counties, as reported in the daily papers of October 27, regrets the little prominence given to horticultural education. This association feels that the general disposition to regard horticulture as a side issue of agriculture is to be deprecated. Horticulture, as embracing market gardening,

fruit-growing, school-gardening, and gardening in private establishments, is a highly-specialised subject, and one of great importance; and the association is of opinion that it cannot be dealt with adequately by an agricultural adviser, but requires the supervision of a trained horticulturist. The special needs of the small holder and of the cottager and allotment gardener (in the amelioration of whose lot horticulture plays an important part) call for similar special treatment. This association fears that unless horticulture is under the direction of a horticultural instructor who has direct access to the Rural Education Committee in each county, through an organising secretary who is not a purely agricultural instructor, its importance will not be realised, and its requirements may be overlooked. In a word, this association considers that horticulture is sufficiently important and distinctive to demand separate treatment from agriculture. *Walter P. Wright, Hon. Secretary, Horticultural Education Association.*

TREE PLANTING.—I notice a paragraph in an article by "A Southern Grower," which may cause some misapprehension as to the results of ramming trees on planting. He says, "The results of last season's planting are not favourable to the Woburn method of puddling trees in. The land was so extremely wet during nearly the whole of that season that a great number of the Apple trees were practically puddled, and never before has there been such a large proportion of dead trees after a planting as there is in my young plantation made under the conditions indicated." When the soil is in a wet and sticky condition, it is certainly unsuitable for planting in the ordinary way, for the earth cannot be shaken between the roots, and contact between it and them is very imperfect. This is well known, and has been fully illustrated by definite experiments at Woburn. But if the ground is rammed, contact between the roots and soil is insured, and, as this ramming results, under all ordinary conditions, in puddling the soil, it does not matter whether the soil is in a puddled condition to start with or not. In fact, the more puddled and sticky the soil is, the better will be the results obtained by ramming as compared with those obtained by planting in the ordinary way. In many of our experiments on the subject, the soil at the time of planting was in a very wet and sticky condition, and in some cases it was purposely made so, whilst an excellent illustration of the way in which tree planting becomes independent of the condition of the soil where ramming is adopted, was given by our planting last season; the condition of the soil at the farm during the autumn and winter months may be judged by the fact that we were never able to lift our Potatoes, and had to leave more than an acre of them undug for another season, yet in spite of this we planted 523 Apple trees, ramming them well, and of these only one died. *Spencer Pickering.*

SOCIETIES.

ROYAL HORTICULTURAL.

NOVEMBER 22.—The fortnightly meeting was held on Tuesday last, and the exhibition provided an excellent floral display, the Hall being well filled with exhibits. Exhibits of Orchids were numerous, there being important groups as well as a considerable number of novelties. The ORCHID COMMITTEE granted three First-class Certificates and three Awards of Merit. Many showy groups of flowering plants were brought to the notice of the FLORAL COMMITTEE, the principal subjects being Begonias, Carnations, Chrysanthemums, Pelargoniums, Ferns and ornamental-leaved and berried plants. This Committee granted ten Awards of Merit to varieties of Chrysanthemums. The FRUIT AND VEGETABLE COMMITTEE made no award to a novelty, and beyond a group of Apples and varieties of Endive grown under trial at Wisley, had little to inspect. At the afternoon meeting in the Lecture Room, Mr. James Hudson gave an address on "Plants in Congenial Positions."

Floral Committee.

Present: W. Marshall, Esq. (Chairman); and Messrs. H. B. May, Jas. Walker, W. J. Bean, C. T. Druery, G. Reuthe, J. Douglas, J. F. McLeod, H. J. Cutbush, Jno. Green, R. C.

Notcutt, W. Howe, Chas. Dixon, H. J. Jones, C. E. Shea, Chas. E. Pearson, F. Page Roberts, E. H. Jenkins, W. J. James, Chas. Turner, R. C. Reginald Nevill, C. R. Fielder, R. Hooper Pearson, W. B. Cranfield, and E. A. Bowles.

E. H. BROWN, Esq., Highwood, Roehampton, Surrey (gr. Mr. R. Bradford), staged a large floor group of stove and greenhouse plants, after the style adopted at competitive flower shows. It included such flowering plants as *Calanthes*, *Celcias*, *Begonias*, *Poinsettias*, *Richardias*, *Lily of the Valley*, *Ericas*, *Primulas*, *Cyclamen*, *Bouvardias* and *Carnations*. *Dracenas* were interspersed with *Codiaeums* (*Crotons*), *Palms* and *Humea elegans*, and a well-grown specimen of *Aralia Veitchii* was placed in the centre. (Silver-gilt Flora Medal.)

LORD HILLINGDON, Uxbridge (gr. Mr. A. R. Allan), staged a large number of well-grown plants of the beautiful rose-flowered *Begonia* *Ensign*. The exhibit was made attractive with small *Palms*, *Ferns* and other greenery. (Silver-gilt Flora Medal.)

GURNEY FOWLER, Esq., Glebelands, South Woodford, showed pink and white-flowered *Begonias* of the *Gloire de Lorraine* type. The plants were admirable specimens, very freely flowered and they made a showy group. (Silver Flora Medal.)

Another showy exhibit of *Begonia Gloire de Lorraine* was staged by Mr. R. FOSTER, Summer Hill, Lindfield, Sussex, the plants being extra large, well-flowered specimens. (Silver Banksian Medal.)

The Earl of STANHOPE, Chevening Park, Sevenoaks (gr. Mr. Charles Sutton), staged half-a-dozen well flowered plants of *Plumbago rosea*. (Bronze Banksian Medal.)

MESSRS. JAMES VEITCH & SONS, LTD., Chelsea, again made an attractive exhibit with *Begonias*, the plants and the method of staging them being both admirable. On the opposite table the firm made an attractive display of *Bouvardias*, admirable plants for greenhouse and conservatory decoration at this season. A large floor-group of Chrysanthemums was also exhibited by Messrs. VEITCH, the plants being compact specimens in 5½ inch pots. They were mainly decorative and single sorts; a selection includes (*single*) *Cinnamon*, *Falcon* (pale orange), *Charming* (rich chestnut); (*decorative*) *Phœbus* (yellow), *Niveus* (white), *Rose Poitevin* (rose), *Mrs. Buckbee* (white), and *Dazzler* (crimson). (Silver-gilt Flora Medal.)

MESSRS. W. CUTBUSH & SON, Highgate, London, filled two long tables with greenhouse plants and *Carnations*, as at the last meeting. *Ericas*, *Liliums*, *Spiræas*, *Palms*, *Aralias*, *Dracenas*, and other decorative subjects were all shown finely as pot plants. (Silver Flora Medal.)

MESSRS. STUART LOW & CO., Enfield, exhibited varieties of perpetual-blooming *Carnations*; the beautiful *Lady Alington* variety was shown splendidly; the colour is salmon-pink. This firm also showed *Cyclamens*.

MESSRS. H. B. MAY & SONS, Edmonton, showed a large bank of *Ferns* having about 60 species and varieties. The plumose sorts of *Nephrolepis exaltata* predominated, and of these none was more beautiful than *N. e. Marshallii*, which originated as a sport from *N. e. Amerpohlii*. One of the smallest *Ferns* in the exhibit was also one of the most beautiful. This was *N. cordifolia crispata congesta*, quite distinct from the type. Amongst the largest plants were *N. exaltata* var. *multiceps*, *N. cordifolia tessellata*, *N. Fosteri* (a sport from *N. exaltata*), *N. exaltata* (type), and *N. pectinata*. (Silver-gilt Banksian Medal.)

MR. L. R. RUSSELL, Richmond, again filled a large table with ornamental-leaved plants, such as *Ivies*, *Euonymus*, *Eleagnus*, *Aucubas*, *Per-nettyas*, and *Veronicas*, some of the specimens being covered with brilliantly-coloured berries. (Silver Banksian Medal.)

MR. H. BURNETT, St. Margarets, Guernsey, set up a showy group of *Carnations*, the blooms being of extra fine quality. Those following were specially good:—*Scarlet Glow*, *Mrs. C. F. Raphael* (cherry-red), *R. F. Felton* (rose-pink), *White Chief*, *Snow Queen*, and *Countess of March* (salmon-pink). (Silver Banksian Medal.)

MR. VINCENT SLADE, Staplegrave Nurseries, Taunton, exhibited bunches of *Zonal Pelargoniums*. There was a large assortment of varieties, some of the more notable sorts being *Clivedon* (orange yellow), *Lady Folkestone* (blush-pink), *Claremont* (white), *Mrs. J. A. Bell* (white and pink, a very pretty combination), *Chas. H.*

Curtis (scarlet), Dublin (cerise), and London (crimson), the two last-named being new varieties.

Mr. W. H. PAGE, Tangley Nursery, Hampton, staged large plants of his new scarlet-flowered *Pelargonium* His Majesty, which received an Award of Merit on November 23, 1909. (Silver Banksian Medal.)

Messrs. H. J. JONES, Ltd., Hither Green, Lewisham, staged an imposing group of *Chrysanthemums*, including numerous large Japanese blooms in epergnes at the back of the display. Edith Jameson, a large Japanese variety of pink colour, has given rise to two fine sports in Mrs. Faulkner (white) and Ernest G. Mocatta (yellow). Mrs. J. Hygate is a handsome incurved variety, the florets being pure white. A handsome white single is seen in Mensa, which was displayed in numerous vases in this exhibit. Other varieties of note were F. S. Vallis (yellow Japanese), Lady Francis Ryder (white Japanese), R. F. Fulton (yellow decorative); R. Hooper Pearson (deep yellow decorative), Golden Nugget (decorative), Sandown Radiance (rich red), Bessie Brown and Buttercup. (Silver-gilt Flora Medal.)

Mr. FRANK LILLEY, Les Hôches, Guernsey, showed varieties of single *Chrysanthemums*, including the new variety Strawberry.

Messrs. H. CANNELL & SONS, Swanley, Kent, exhibited large-flowered, single *Chrysanthemums*: Cannell's Crimson, Yellow Gem, Mrs. R. Cannell (crimson), Merstham Jewel (bronze), Honey-suckle (white), Dr. F. A. Collet (terra cotta), and Mrs. Bruce (white) are a selection. This firm also made a brilliant display with bunches of Zonal *Pelargoniums*. The following varieties were the best in their colours:—(Scarlet) The Sirdar, New York, Naples, Arabic, Kingswood, Jupiter, Berlin; (salmon) Barbara Hope, Mary Pelton, Taurus, Ceres, Carmania; (crimson) Aldenham, Sir T. Hanbury, London, Capt. Holford; (rose) Dublin, Mrs. Williams, Caronia; (pink) Caledonia, Henry Compton, Lady Curzon, Paris; (white) Venus, Mary Beaton, Snowstorm, Snowdrop and Claremont. (Silver Flora Medal.)

Messrs. W. WELLS & CO., LTD., Merstham, Surrey, showed *Chrysanthemums*, including varieties of all the types, but singles mainly. We noticed Mrs. G. C. Kelly (Japanese), Amaranth (with a splash of chestnut and a silver reverse), Mensa (a fine white single), Arcturus (crimson, striped with yellow), Cannell's Crimson, Rose Ellis (pink), Crimion Jewel (a seedling from Merstham Jewel), Miss Hilda Wells (this pretty single *Chrysanthemum* is best not disbudged; the colour is a bright orange-red), White Baby (a miniature-flowered Pompon), and Antique (old rose; a decorative, being a sport from Delecteur Euguehard). (Silver Flora Medal.)

Mr. JAMES BOX, Lindfield, Haywards Heath, Sussex, showed *Chrysanthemums*, including some pretty single varieties, Mrs. W. Buckingham (pink) being prominent. The variety Golden Spray has clusters of small yellow blooms like a spray of *Cineraria*.

Messrs. G. WILLIAMS & CO., Cardiff, staged varieties of *Chrysanthemums*, amongst them being many pretty single flowers.

AWARDS OF MERIT.

Awards of Merit were recommended to the following varieties of *Chrysanthemums*:—

Chrysanthemum Brightness. This is a very large single variety, and the colour a brighter red than we have seen in single *Chrysanthemums*. The orange-coloured disc is surrounded by a yellow ring. The florets are too thin to keep the flower perfectly regular in form. Shown by Messrs. GEO. WILLIAMS & CO., Cardiff.

C. Crimion Jewel.—This is a decorative variety, with an open centre like that of a single flower. Its attractiveness lies in its gold tinted florets, which, in themselves, are rich orange-red. Shown by Messrs. WELLS & CO.

C. D. B. Crane.—This is a first-class exhibition flower of the Japanese type. The florets are moderately broad, very long, and they form a deep flower of great width. The colour approaches to buttercup yellow, but some of the flowers, evidently from later buds, develop a brownish-red, which streaks the yellow to a considerable extent. The bloom exhibits much refinement. Shown by Mr. MARTIN SILSBURY, Shanklin.

C. Ernest G. Mocatta.—This is a yellow sport from the well-known, pale-mauve, Japanese Edith Jameson. The flowers are a rich canary-

yellow shade. Shown by Mr. THOMAS STEVENSON, Woburn Place Gardens, Addlestone.

C. Ethel Thorp.—A very large, mauve-tinted incurved flower, suitable for exhibition purposes. Shown by Mr. H. A. THORP, Durrington, Worthing.

C. Mrs. Foot.—A large single variety, with quinn flowers having a white ring round the yellow disc. It has stiff stems, which hold the flowers erect. Shown by Mr. L. L. LAWRENCE, Shoreham.

C. Peter Plant.—This single variety obtained its award for the rich mauve-pink colour of the flowers, which are fairly erect as shown. Exhibited by Mr. L. L. LAWRENCE, Shoreham.

C. Sandown Radiance.—A rich-crimson single flower, 5½ inches in diameter, borne on stiff erect stems. An excellent variety for providing "colour." Shown by Messrs. WELLS.

C. Strawberry.—A distinct single variety, which exhibits a soft, pale-red tint which is not common. Shown by Mr. FRANK LILLEY, Guernsey.

C. William Turner.—A white Japanese flower of the largest size, possessing broad florets incurving a little at the tips. This will be amongst the best exhibition "whites." Shown by Messrs. WELLS.

Orchid Committee.

Present, Harry J. Veitch, Esq. (in the Chair); and Messrs. Jas. O'Brien (hon. sec.), J. Charlesworth, J. Cypher, W. P. Bound, W. H. Hatcher, H. G. Alexander, H. Ballantine, Gunney Wilson, J. Wilson Potter, W. Bolton, H. Little, W. Thompson, F. Sander, F. M. Ogilvie, Stuart Low, A. A. McBean, C. H. Curtis, and W. Cobb.

There was a fine show of Orchids, chiefly *Cypripediums*, including a fine hybrid shown by Lieut. Col. Sir GEORGE L. HOLFORD, K.C.V.O., and a noble variety of *C. Charlesworthii* named Tenelaire, shown by Messrs. SANDER & SONS.

H. S. GOODSON, Esq., Fairlawn, Putney, was awarded a Silver gilt Flora Medal for a fine group in which most of the best *Cypripediums* of the season were well represented. These included very fine forms of *C. insignis* Sanderae and other varieties of *C. insignis*; *C. Leeannum* Clinkaberry-anum with seven flowers, also other types of *C. Leeannum*. *Odontoglossums* were arranged at the back of the group, and amongst *Laelio-Cattleyas* we observed the new *L. C. Myrtha* (C. *Dowiana* Rosita × *L. C. Gotoiana*), a fine flower of an uncommon tint of yellowish-rose; also *Cattleya* Venus Fairlawn variety, and a distinct *C. Iris*. Beside the group was a remarkable display of about 130 coloured drawings of Orchids in Mr. GOODSON'S collection.

J. GURNEY FOWLER, Esq., Glebelands, South Woodford (gr. Mr. J. Davis), was awarded a Silver Flora Medal for a representative group of good *Cypripediums*, with which were arranged *Odontoglossum crispum* and other Orchids. Specially fine were the large and very darkly-coloured *C. gigas* Glebelands variety, *C. triumphans*, *C. Tityus superbum*, C. Baron Schröder, varieties of *C. Thalia*, some of the best yellow varieties of *C. insignis* Sanderae, and good forms of *C. Leeannum*.

Messrs. JAS. VEITCH & SONS, LTD., King's Road, Chelsea, were awarded a Silver Flora Medal for a fine group of *Cypripediums*, which included several new hybrids. The chief novelty was *C. Iolanthe* (see Awards). Another pretty new hybrid was *C. illustre* (*Leeannum* × *Euryades*), a distinct and pleasing flower. Others noted were *C. Milo superbum*, *C. Maudiae*, C. Baron Schröder, fine specimens of *C. insignis* Sanderae, and other forms of *C. insignis*; also good specimens of *C. Leeannum*. The plants were finely grown and well flowered, and the hybrids showed interesting variety.

Messrs. JAS. CYPHER & SONS, Cheltenham, were awarded a Silver Flora Medal for an extensive group of *Cypripediums*, in the centre of which were some well-flowered plants of *Vanda cœrulea*, *Calanthe Veitchii*, *Odontoglossum crispum*, and several hybrids, one being a specially dark variety. Of the *Cypripediums* noted were some very dark-flowered *C. Fairrieannum*, *C. Prospero majus*, *C. Leeannum giganteum*, *C. L. corona* and other forms of *C. Leeannum*; *C. Rolfeæ*, *C. Vipanii*, a selection of forms of *C. insignis*, and some attractive unnamed hybrids. In front, were several plants of the pure white *Masdevallia tovarensis*, the scarlet *Sophrontitis grandiflora*, and *Lycaste lasioglossa*.

PANTIA RALLI, Esq., Ashted Park (gr. Mr. Hunt), was awarded a Silver Banksian Medal for an effective group of splendidly grown and well-flowered plants of *Calanthe Bryan* and *C. Wm. Murray*.

SAMUEL LARKIN, Esq., The Ridgeways, Haslemere (gr. Mr. Hale), was awarded a Silver Banksian Medal for a neat group, in the centre of which was a grand plant of *Cattleya lucida* (see Awards). Others of interest were two plants of *Cymbidium Tracyanum*, a pretty hybrid between *Laelia pumila* and *Cattleya Hardyana*, and other *Laelio-Cattleyas*; *Cypripediums*, and *Oncidium incurvum*.

Messrs. J. & A. A. McBEAN, Cooksbridge, were awarded a Silver Banksian Medal for a fine group of *Cypripedium* *insigne* Sanderae, which included about 30 specimens, one having 12 fine yellow and white flowers. With these were several specimens of *C. insignis* "Harefield Hall variety."

Messrs. STUART LOW & CO., Bush Hill Park, Enfield, secured a Silver Banksian Medal for an effective group, at the back of which was a selection of brightly-coloured *Dendrobium Phalaenopsis Schroderianum*. In front of the display were good varieties of *Cattleya Fabia* and other hybrids, *Cypripedium* *insigne* Sanderae, *C. Fulshawense*, and other *Cypripediums*, an elegant plant of *Liparis longipes* with about 20 flower-spikes, various *Oncidiums*, including the entirely yellow-flowered *O. varicosum luteum*, and some pretty *Odontoglossums*.

M. FIRMIN LAMBEAU, Brussels, exhibited *Cattleya* Maggie Raphael "Lambeau's variety" (*Triana* × *Dowiana aurea*), a finely formed, pink tinted flower, with ruby crimson front to the lip; and *Cattleya Drapsiana* (Mrs. Pitt × *Dowiana aurea*), with greenish, primrose-yellow sepals and petals, the rose-coloured lip being veined with orange.

Messrs. SANDER & SONS, St. Albans, showed two fine novelties (see Awards), also *Chondropetalum Fletcheri*, a dark-coloured, unnamed *Bulbophyllum*, and a *Lycaste*, from Peru, with ivory-white flower.

Mr. E. V. Low, Vale Bridge, Haywards Heath, staged a small group of rare Orchids, including *Cattleya* Maggie Raphael alba, *C. Clarkei*, *C. Lambeauiana*, *Cypripedium* *Thalia* Westfield variety, *C. Germaine Opoix* Westfield variety, *C. Priam*, *Cymbidium erythrostylum*, and *Brasso-Cattleya* Mrs. J. Leemann.

Messrs. CHARLESWORTH & CO., Haywards Heath, staged an effective group, in which were noted many interesting Orchids, including a fine, red-flowered *Odontioda Devossiana*, *Cypripedium* *Thalia*, *C. Leeannum giganteum*, and other *Cypripediums*, *Calanthe Burfordensis*, and some hybrid *Cattleyas*.

HENRY LITTLE, Esq., Baronshalt, Twickenham (gr. Mr. Howard), showed *Cypripedium* *insigne* Baronshalt variety, a distinct form, in which the olive-brown spotting on the dorsal sepal is partially suppressed.

R. G. THWAITES, Esq., Chessington, Christchurch Road, Streatham, showed an interesting selection of hybrids, including the large and handsome *Laelio-Cattleya* *Rubens* (*C. Hardyana* × *L. pumila*), *Odontoglossum Blackii* (*Pescatorei* × *Rossii*), a very neat and pretty hybrid, with pure white flowers, the sepals being dotted with dark purple, as in *O. Rossii*, and the petals having a few purple marks at the base; *Sophrone-Cattleya* *Thwaitesii* (*C. Mendelii* × *S. grandiflora*), formed like *S. C. Doris*, but with rose-tinted sepals and petals, and mauve tip to the labellum; four white-petalled *Cattleya* *Maggie Raphael*; and a very rich scarlet *Odontioda Charlesworthii*.

AWARDS.

FIRST-CLASS CERTIFICATES.

Cypripedium Minotaur (*Euryades* × *Minnie*), from Lieut. Col. Sir GEORGE L. HOLFORD, K.C.V.O., Westonbirt (gr. Mr. H. G. Alexander).—This is one of the best of the many superb *Cypripediums* shown from Westonbirt. Having regard to the size of the flowers, its thick, wax-like substance and distinct markings, it is in advance of any yet shown. The very broad dorsal sepal is pure white, with a small, yellowish green base, all but the margin being evenly blotched by a deep claret-purple colour. The massive petals and lip are yellow at the margins, the inner parts being tinged with purplish-brown. The parentage of the hybrid is interesting, *C. Euryades* being *C. Boxallii* × *C. Leeannum*, and

C. Minne (intens \times *Lecanum*). Thus the hybrid is of three parts insignis, two of *Spicerianum*, one of *villosum*, and one of *Boxallii*.

Cypripedium Charlesworthii Temeraire, from Messrs. SANDER & SONS, St. Albans.—A unique variety, resembling nothing which has yet appeared out of the many thousands of the species imported. The petals and lip are formed and coloured similar to a large form of typical *C. Charlesworthii*. The very remarkable dorsal sepal is more than 3 inches in height, and nearly 4 inches in width, broadly ovate. The apex is carried up to a point, the sides being wavy at the margin. The ground is white, closely veined with a delicate tracery of a rosy-lilac colour.

Pan la variegata Sanderi, from Messrs. SANDER & SONS, St. Albans.—A beautiful variety, and the first of its colour. The well-formed, white flowers, instead of being tinged with blue, as in other forms, have the tips and margins of the sepals tinged with magenta-pink, the petals being flushed with the same colour, and the lip of a deep-magenta shade.

AWARDS OF MERIT.

Cypripedium Iolanthe (Euryades \times insignis Sanderi), from Messrs. JAS. VEITCH & SONS.—A flower of fine form, the dorsal sepal being unusually broad and of a clear white, spotted with purple. The broad petals are tinged and slightly veined with purple, the margins being yellow. The lip is yellow, tinged with purple.

Cattleya lucida (Bovringiana \times Schilleriana), from SAMUEL LARKIN, Esq., The Ridgeways, Haslemere (gr. Mr. Hale).—A charming winter-flowering hybrid, the inflorescences of 10 to 12 flowers forming bouquets. The sepals and petals are rose-purple, the tube of the lip, which folds over the column, blush-white, the rounded front lobe being purple, with a white margin. The finely-grown specimen carried three flower-spikes.

Sophro-Lælio-Cattleya Alethæa (C. Percivaliana \times S.-L. Gratrixia), from H. S. GOODSON, Esq., Fairlawn, Putney (gr. Mr. G. E. Day).—A pretty hybrid, of good size and unusual tinting, the rosy sepals and petals having a light golden tone, and the ruby-crimson labellum an attractive veining of deep yellow.

CULTURAL COMMENDATION

to Mr. Spowage (gr. to Col. CARY BATTEN, Abbots Leigh, Clifton) for a plant of *Oncidium tigrinum*, with 53 fine flowers on a single spike.

Fruit and Vegetable Committee.

Present: G. BUNYARD, Esq. (in the Chair); and Messrs. J. CHEAL, W. BATES, A. DEAN, G. KELL, A. R. ALLAN, J. JAKES, O. THOMAS, W. POUPART, W. JEFFRIES, E. BECKETT, J. DAVIS, G. REYNOLDS, J. HARRISON and H. J. T. HOOPER.

The finest exhibit before the Committee was a collection of 40 dishes and baskets of superb Apples shown by Lieut.-Col. BORTON, Hunton, Maidstone (gr. Mr. Whittle). Not a single fruit of this fine collection had been grown on walls, but all were from bush or cordon trees trained on trellises in the open. Of Codlin varieties, very fine specimens were found in Lane's Prince Albert, Belle Pontoise, Belle du Bois, Bramley's Seedling, Cox's Pomona, Bismarck, Gascoyne's Scarlet Seedling, Warner's King, Mère de Ménage, Hambling's Seedling, Emperor Alexander, Lord Derby, Newton Wonder, Peasgood's Nonesuch and Sandringham. Superb dessert Apples were seen in Brownlee's Russet, Vicar of Beighton, Rival, Barnack Beauty, Melon Apple, Ribston and Cox's Orange Pippins. (Silver-gilt Hogg Medal.)

Mr. W. POUPART, Jun., Twickenham, showed a collection of nearly 100 bottles of preserved fruits. These included Plums, Raspberries, Red Currants, Loganberries, Blackberries and Gooseberries. (Silver-gilt Knightian Medal.)

Mrs. MILLER, Moyle, Marlow, showed a collection of preserves and chutneys.

LORD LLANGATTOCK, The Hendre, Monmouth (gr. Mr. T. Coomber), sent two very fine and handsome smooth Cayenne Pines with small crowns. One of the fruits weighed 9 lbs. (Silver Knightian Medal.)

SIR WALPOLE GREENWELL, Marden Park, Surrey (gr. Mr. Lintott), showed 15 bunches of Grapes, comprising three each of Muscat of Alexandria, Black Alicante, Appley Towers, Gros Maroc and Gros Colmar.

A collection of blanched Endives, comprising 24 varieties, but not all of them distinct, was shown from the Wisley gardens. After a careful scrutiny of the whole, three marks were awarded to (7) moss-curl; (10) green-curl; (31) white-curl; (33) white-curl; and (57) Winter Giant. Similar awards were made to broad-leaved varieties: (4) Broad-leaved Batavian; (26, 27 and 28) all Round-leaved Batavian. Some heads showed great solidity and all were well blanched.

THE LECTURE.

At the afternoon meeting of Fellows Mr. J. HUDSON gave a lecture on "Plants in Congenial Positions." Mr. HUDSON illustrated his remarks with about two dozen lantern slides from photographs of plants growing under his care in the gardens at Gunnersbury House, Acton. He said that he attached great importance to providing shelter, especially from cold winds. Moisture-loving plants need an abundance of water, and he instanced both Palms and Bamboos as cases in point. With respect to Bamboos, he recommended the use of bonemeal or some other phosphatic manure, rather than a too free application of nitrogenous fertilisers, as it is better to build up growth of an enduring character than to encourage the formation of large but sappy shoots.

HORTICULTURAL CLUB.

THE WORK OF A PUBLIC PARKS DEPARTMENT.

ON the occasion of the usual house dinner of the members of this club, on Tuesday evening last, at the Hotel Windsor, Westminster, Mr. Harry J. Veitch presiding, Mr. W. W. Pettigrew, superintendent of the city of Cardiff public parks, gave a lecture on "The Aim and Scope of a Public Parks Department." Quoting John Stuart Mill, he said that "the multiplication of happiness is, according to utilitarian ethics, the object of virtue." This being so, a parks department, organised on proper lines, is one of the most important, as it is one of the most virtuous, in the utilitarian sense, of our public institutions. Its aim or design is to secure the happiness of every individual.

This is done in a variety of ways, each of which, however, runs into the other:—

(a) By promoting directly and indirectly the health, both morally and physically, of the inhabitants of towns.

(b) By providing healthy amusement of every possible kind in the open air.

(c) By providing a wider interest in life by (1) giving opportunities of getting into closer touch with natural objects; (2) by the development of æsthetic tastes—natural scenery and music.

Whilst the aim is as already described, the various parks departments have not the same scope in fulfilling them. Scope largely depends on wealth, and on purely accidental circumstances connected with the character and formation of the grounds belonging to the department concerned.

The lecture, which was much appreciated, was illustrated by a large number of lantern slides depicting characteristic park-scenery and amusements. The subject is referred to in our leading article.

ULSTER HORTICULTURAL.

NOVEMBER 8, 9.—The annual Chrysanthemum show under the auspices of the Ulster Horticultural Society was held on these dates in St. George's Market. Fine weather favoured the inaugural proceedings, the opening ceremony being performed by the Countess of Aberdeen. The show was in every way worthy of the high traditions of the society, and both as regards quantity and quality the exhibits were well up to the standard of former years. The groups of Chrysanthemums made a fine display, the principal prize winners in this section being Mr. JOHN ROGERS, J.P., who had an attractive exhibit interspersed with foliage plants; Mr. CHARLES DUFFIN, Mr. JAMES BRADLEY, and Mrs. FORSTER GREEN. Mr. HUGH DICKSON scored meritorious successes in the section devoted to stove and greenhouse plants, table plants, and Conifera, while Mr. FRANK WORKMAN and Mr. CHARLES DUFFIN were

successful in the department for stove and greenhouse of forced plants arranged for effect. Mr. JOHN ROGERS, J.P., won the 1st prize in the class for Ferns, while in the classes for Palms, Cycads, Codiaums, and Dracænas premier awards went to Mr. CHARLES DUFFIN, Mr. FRANK WORKMAN, and Lady CLANMORRIS. The last-named excelled in the class for six plants, dissimilar, suitable for table decoration, whilst in the Begonia classes Mr. H. E. RICHARDSON, Lisburn, and Lord O'NEILL were prominent exhibitors. The class for cut blooms of Japanese Chrysanthemums shown in vases made a fine colour scheme. The 1st prize for 15 vases was won by Mr. JOHN JAMESON, D.L., who shows year after year, and other winners included the Countess of CALEDON, Lord O'NEILL, Mrs. E. ROBERTSON, Mr. JOHN ROGERS, J.P., and Lady PALMER. There has seldom, if ever, been a better show of single Chrysanthemums at this exhibition. Prizes were gained by Colonel R. G. SHARMAN-CRAWFORD, D.L., Mr. EDWIN HUGHES, J.P., Mr. VINCENT CRAIG, Mr. W. H. McLAUGHLIN, Mr. J. BRADLEY, Lady CLANMORRIS, Mr. CHARLES DUFFIN, Lord O'NEILL, Mr. GEORGE J. PRESTON, and Mrs. FORSTER GREEN. Lord O'NEILL was placed 1st for a table of dessert fruits, Mr. CHARLES DUFFIN being a good 2nd.

ABERYSTWYTH CHRYSANTHEMUM.

NOVEMBER 9.—The 15th annual show of the Aberystwyth Chrysanthemum Society was held on this date in the Pier Pavilion. The entries numbered 156, there being an increase in the open and amateur classes, but exhibits in the cottagers' class were fewer than last year. The Silver Cup given by the tradesmen of Aberystwyth for the best group of Chrysanthemums in pots was won by Mr. R. WELLER, Jun., who has been successful four times, and has thus won two cups outright. He was also awarded a Certificate of Merit for the best Chrysanthemum plant in the show. The cup given by Mr. Rufus Williams for 24 cut blooms of Chrysanthemums was also won outright by Sir C. E. G. PHILLIPS. There was keen competition throughout the several classes, and the single blooms, as well as the table plants, were of exceptionally fine quality. Certificates of Merit were awarded to Mr. J. H. PHELPS, Carmarthen, for the premier bloom in the amateur classes; to Sir C. E. G. PHILLIPS for the best bloom in the show; and to Mr. J. WESSELL, for the best plant selected from the entire exhibition.

STIRLING CHRYSANTHEMUM.

NOVEMBER 10, 11.—The 21st annual show was held on these dates in the Albert Halls, Stirling. Compared with former years, the entries were fewer in number, but the exhibits were of superior quality.

The principal class for cut blooms was for six vases of Japanese Chrysanthemums, distinct, three blooms of each variety. Mr. McLEAN, Greenfield, Alloa, secured the premier award (the Hon. President's Cup) with clean, well-finished blooms of good size, Mrs. A. T. MILLER, Edith Jameson, Mrs. A. G. PIRIE, and Mary McLEAN being prominent varieties. The last-named is a primrose-coloured sport from Mrs. C. Beckett, obtained by Mr. McLEAN three years ago.

Mr. J. SMALL, Norwood, Alloa, was placed 1st for 12 blooms of Japanese varieties shown on boards, his best examples being Bessie Godfrey, Master James, Lady Talbot, Geo. Mileham '08, and Mrs. A. T. MILLER.

The specimen plants of Japanese varieties showed an advance on exhibits of former years. Plants in 6-inch pots were again a feature, while the single-flowered sorts were the best that have been staged at any previous exhibition in Stirling. Messrs. JAS. WOOD, Dunmore; R. JENNER, Newhouse; J. K. MESTON, Stirling; and H. GRAY, 26 Park Terrace Stirling, all won 1st prizes in this section.

The usual supplementary classes consisting of Primulas, Ferns, Zonal Pelargoniums, Roman Hyacinths, and other greenhouse plants were all well filled.

Excellent Grapes were displayed by Messrs. J. MITCHELL, Airthery Castle; C. PALMER, Alloa; and J. SMALL, Norwood. Excellent Pears were shown by Mr. MITCHELL; and fine Apples by Mr. BLACKLOCK, Blairdrummond.

Vegetables made a meritorious display. Messrs. C. SHAW, Boquhan, and GEO. WATSON,

Kippen, led in the classes for collections, and the same exhibitors were successful in the other vegetable classes.

Honorary exhibits.—Messrs. DRUMMOND & SONS, Stirling, exhibited a collection of 70 dishes of Apples; Messrs. GEORGE BUNYARD & CO., Maidstone, also staged a fine collection of Apples; Mrs. TASKER, Stirling, showed vases of early-flowering Chrysanthemums in 50 varieties, also a basket of Roses; Mr. R. MORRISON, Stirling, displayed a number of Chrysanthemum plants in flower.

BAKEWELL CHRYSANTHEMUM.

NOVEMBER 9, 10.—The 14th exhibition was held in the Town Hall on these dates. Mr. H. E. Spriggs discharged the duties of secretary, and is to be congratulated on the results.

The semi-circular groups arranged around the hall made a fine display. These were divided in two classes. Mrs. MCCREACH-THORNHILL (gr. Mr. G. Harvey) gained the 1st prize, which included a Silver Challenge Cup (given by R. Armitage, Esq.) for a splendid group of specimen blooms; 2nd, Mrs. ARMITAGE (gr. Mr. Kirkby). Mrs. MCCREACH also won the 1st prize for a group of single and decorative Chrysanthemums interspersed with other foliage, winning another Silver Challenge Cup; 2nd, S. ORME, Esq. A special feature in the cut bloom classes was the exhibits of 12 Japanese blooms, distinct, arranged with foliage on long stems, for effect. Mr. MCINNES carried off the premier award with fine blooms; the variety "Lady Talbot" in his collection was adjudged to be the best bloom in the show. This exhibitor was also placed 1st in the class for 12 Japanese blooms, distinct; six Japanese blooms, distinct; and for six Japanese blooms of one variety. The single-vase class open only to lady competitors brought six entries; Miss DUNN won the 1st prize, being followed closely by Mrs. MAUDSLEY. In the amateurs' classes, both for Chrysanthemums and vegetables, Mr. W. SAUNDERS was the most successful exhibitor.

DEVON AND EXETER HORTICULTURAL.

NOVEMBER 10, 11.—The autumn exhibition, the 210th show of the society, was held in the new Queen's Hall, Exeter, a handsome and commodious structure, this being the first time it has been used for a public function. So far as Chrysanthemums were concerned, the show was an unqualified success, both the cut blooms and the groups being remarkably good. Competition was keen, and the display generally showed an advance on those of recent years. The chief prize in the cut-bloom classes was a cup of the value of £30, offered by Messrs. Saunders & Biss, horticultural builders. The cup must be won by the same exhibitor three times before it becomes his property. Money prizes were added. The Rev. T. SHEEPHANKS, Chudleigh (gr. Mr. A. Dunkley), who had won the cup twice previously, was once again the best exhibitor. Competitors were required to stage in this class 12 vases of Japanese varieties, distinct, three blooms of each; four vases of Incurved varieties, distinct, not more than three blooms of each sort, and eight vases of single Chrysanthemums, distinct, not more than 20 blooms of each variety. Among his choice Japanese varieties were Mrs. J. Hygate (awarded the N.C.S. Medal), Clara Wells, Lady Talbot, Hon. Mrs. Lopes, J. W. Molyneux, Superb, President Viger, and P. Radaelli. The 2nd prize in the cup class was awarded to Major C. H. CHICHESTER, and the 3rd to Mrs. GIDLEY, both of whom staged fine blooms. The Rev. SHEEPHANKS was also placed 1st in the class for the best 24 Japanese Chrysanthemums in not fewer than 18 varieties, being followed by Mr. W. BROCK. The Rev. SHEEPHANKS's best blooms were Master David, Mrs. A. T. Miller, F. S. Vallis, Shanklin, Florence Penfold and Algernon Davis. E. C. NORRISH, Esq., Barnstaple, was placed 1st in the class for 12 Japanese blooms, distinct, whilst for six white varieties of Japanese sorts Mrs. GIDLEY, Hoopern House (gr. Mr. W. R. Baker), was awarded the 1st prize. Mrs. GIDLEY was also 1st in the similar class for six yellow varieties, her best specimens being Lady Talbot and F. S. Vallis, and for six of any other colour. The

best illustrative collection of cut blooms arranged on a table 8 feet by 4 feet was shown by Mr. C. M. COLLINGWOOD, who won the 1st prize. The N.C.S. Medal for the best bloom of a Japanese variety (not Incurved) was awarded to Mr. W. Nix, Exeter, for President Viger.

Competition in the class for a group of Chrysanthemums was very keen: the 1st prize was won by a new competitor, Mr. W. J. PRING, Exeter (gr. Mr. Webber), whose group scored in lightness of arrangement, variety, and general effect. Mr. W. BROCK, Exeter (gr. Mr. W. Rowland), was a close 2nd, his blooms being superior but the arrangement heavier and less effective. The 1st prize carried with it a silver cup presented by Mr. Duke, K.C., M.P.; the cup must be won three times before becoming the absolute property of the winner. This is Mr. PRING's first time of winning it.

APPLES.—For a collection of 24 varieties, distinct, 12 dessert and 12 culinary sorts, the 1st prize was won by the Countess of EGDMONT (gr. Mr. Thos. Ley); Mr. W. ORROCK was placed 2nd. In the class for six dessert Apples, Dr. SAMWAYS (gr. Mr. A. C. Williams) was placed 1st, having choice fruits of Cox's Orange Pippin, King of the Pippins, Allington Pippin, Red-ribbed Greening, Ribston Pippin, and Blenheim Pippin. H. S. THOMAS, Esq. (gr. Mr. E. Leach), was 1st for six culinary varieties. Dr. SAMWAYS was the principal winner in the single-dish classes, in which Mrs. C. HEARN (gr. Mr. Anning) and T. H. KEKEWICH, Esq. (gr. Mr. Abrams), also won prizes.

PEARS were of rather poor quality. For a collection of six dessert and three culinary sorts, the 2nd prize was awarded. For three dessert varieties the 1st prize was awarded to Mrs. HEARN; whilst Dr. SAMWAYS excelled in the class for three culinary varieties.

VEGETABLES were extra fine in quality, and the competition was keen in almost all the classes. The seedsmen's classes (special prizes were offered by Messrs. Robert Veitch & Son, Exeter, Sutton & Sons, and James Carter & Co) were keenly contested. In the society's class for a collection of eight distinct kinds, Mrs. GIDLEY, Hoopern House, was placed 1st, and J. H. LEV, Esq., Trehint, 2nd.

Trade exhibits were displayed by Messrs. ROBERT VEITCH & SON, Exeter; JARMAN & CO., Chard; and SAUNDERS & BISS, horticultural builders, Exeter. The arrangements were efficiently carried out by the hon. secretary, Mr. T. A. Andrews.

DUNFERMLINE CHRYSANTHEMUM.

NOVEMBER 11, 12.—This show was held in St. Margaret's Hall, Dunfermline, on these dates. The entries were in excess of last year by 65, the increase being chiefly in the cut bloom classes. A Challenge Cup was offered this year for the first time for eight vases of Chrysanthemums in as many varieties, three blooms of each. Mr. WALDIE, Dollarbeg, won the trophy easily. Mr. T. D. PEEBLES, Stirling, won the premier places in the amateur's section.

Plants are always shown well at this Dunfermline exhibition, and the high quality was maintained this year both in the professional and amateur classes.

Vegetables formed a feature. Mr. J. WALDIE was awarded the 1st prize in the class for a collection, the produce being set up in fine style. Leeks, Carrots, and Onions were shown well.

Fruit is provided for in two classes only. Mr. J. MITCHELL, Broomhall, led with good quality Grapes and fine Apples; fruits of Ribston Pippin were remarkable for their colour.

Messrs. JAS. FAIRLEY & CO., Cairneyhill, exhibited 50 varieties of outdoor Chrysanthemums, also floral designs. Mr. R. FERGUSON, South Nursery, Brucefield, Dunfermline, showed a number of Roses cut from plants out of doors.

BRADFORD CHRYSANTHEMUM.

NOVEMBER 11, 12.—The 24th annual exhibition was held on these dates in the St. George's Hall. The number of exhibitors was sixty, which is well up to the average number for this show. In the principal class for cut blooms, that for 24 Japanese Chrysanthemums in not fewer than 18 varieties, the 1st prize was won

by A. JAMES, Esq., Rugby (gr. Mr. A. Chandler), who showed especially good flowers of George Hemmings and Master James. The 2nd prize was won by E. G. MOCATTA, Esq., Addlestone (gr. Mr. T. Stevenson), whose exhibit contained a fine flower of Lady Talbot, which was adjudged the best bloom in the show of its type. Mr. MOCATTA was placed 1st for 12 Japanese varieties, dissimilar, followed by Mr. JAMES, whilst Mr. G. W. DRAKE, Cardiff, excelled in the class for 24 Incurved varieties, and A. TATE, Esq., Leatherhead (gr. Mr. W. Mease), showed best in the class for 12 blooms of Incurved varieties. The premier bloom of an Incurved was G. F. EVANS, shown by Mr. DRAKE. Other prize-winners in the Chrysanthemum classes were Messrs. H. CLARK & SON, Rodley; Mr. W. IGGULDEN, Frome; Mr. J. THORNTON, Drighlington; and Mr. CHAS. JONES, Abergele. A new local class for 18 blooms arranged in vases with Ferns and foliage produced eight entries, of which Mr. L. SHEARMAN's collection, containing a good show of blooms, was adjudged the best.

WEST OF ENGLAND CHRYSANTHEMUM.

NOVEMBER 15.—The annual show was held on this date in the Guildhall, Plymouth, and a very creditable exhibition was provided, though it is evident that the fashion for showing large blooms has greatly declined, at all events in the south-west of England, as, in place of the numerous competitors who formerly exhibited in these classes, there was this year but a single entrant for the open prizes. The staging in the hall was admirable, and the groups of single Chrysanthemums were very effective and graceful. The 1st prize for 48 Japanese blooms was won by Rev. T. SHEEPHANKS, in whose stand Lady Talbot, Hon. Mrs. Lopes, J. H. Sidbury, and General Hutton were very fine. The same exhibitor won 1st prizes for 12 Japanese, 12 Japanese Incurved, and 18 Japanese blooms displayed in vases. For 12 vases of single Chrysanthemums, three sprays of each, the 1st prize was won by Mr. J. WEBBER. The 1st prize for a group of Orchids was won with a fine collection of Lycastes, Odontoglossums, Cattleyas, Cypripediums and other species by Mr. J. WEBBER, and the 1st prize for a group of stove and greenhouse plants by the same exhibitor with an exhibit containing Lilium Harrisii, Carnations, Cyclamen, Chrysanthemums, Codiaums (Crotons), Asparagus Ferns, and Palms. One of the prettiest features in the show was the 1st prize stand of salads, exhibited by Mrs. BAINBRIDGE. The exhibit contained 42 varieties, and was brilliant in colouring, with scarlet and golden Capsicums, Chilis, red and white Radishes, large yellow and red Tomatoes, and small Currant Tomatoes of the same colours, variegated Chicory with yellow and crimson leaves, pillars of Cress, Endives, Corn salad, Chervil, and Borage. The majority of the classes were open only to residents within 15 miles of Plymouth, and the competition in these classes was very keen, fine cut blooms being shown and good plants of many varieties. There were also classes open to amateurs, cottagers and artisans which were well filled. An excellent display of fruit was staged, and the show of vegetables was also of high merit. The 1st prize for a collection of 24 dishes of fruit was won by Mr. F. R. RODD with a very perfect selection of high-class specimens, while the Earl of MORLEY won the 1st prize for 20 dishes of Apples.

The attractions of the show were greatly enhanced by the exhibits of nurserymen. Messrs. R. VEITCH & SON, Exeter, who were awarded a Silver Medal and a Certificate of Merit, had a fine exhibit, in which were Vaccinium Vitis idaea, Pernettya mucronata, Skimmia japonica, Cotoneaster frigidus, Acacia platyptera, Grevillea Preissii, G. alpina, Quercus coccinea, Pancretium macrostephana, Nerine Bowdenii, N. Fothergillii major, and a fine collection of winter-flowering Carnations. Messrs. SUTTON & SONS, Reading, exhibited a superb collection of vegetables, for which they were awarded the Society's Gold Medal and Certificate of Merit. THE DEVON ROSERY, Torquay, showed a fine collection of Apples. Mr. W. J. GODFREY, Exmouth, staged a quantity of Chrysanthemums and a collection of Zonal Pelargoniums, as well as many hybrid Gerberas.

WINCHESTER CHRYSANTHEMUM.

NOVEMBER 15, 16.—As usual the annual autumn show was held in the Guildhall, and, although exhibits were not quite so numerous as last year in the classes for cut blooms, the deficiency was fully made up in the decorative section. Nowhere is a finer display of Incurved blooms to be seen than at the Winchester Shows, as the prizes offered attract most of the leading Chrysanthemum exhibitors.

PLANTS.

In the class for a collection of Chrysanthemum plants arranged for effect, the judges to take into consideration the quality of the blooms, there were only two entrants, MATTHEW HODGSON, Esq., Moreton House, Winchester (gr. Mr. A. J. Marsh), being distinctly 1st, with plants carrying handsome blossoms, none too well arranged; 2nd, JAMES HARRIS, Esq., Barton Mark, Winchester (gr. Mr. J. Knight).

Dwarf plants and high quality blooms with good foliage, suitable for conservatory decoration, receive every encouragement in the schedule. In the class for nine specimens Col. DICKINS, Edge Hall, Winchester (gr. Mr. G. Adams), was easily 1st, with plants carrying exhibition blooms, of such varieties as the following: Mme. G. Rivol, F. S. Vallis, Emblème Poitevine, J. Peed, and Mme. R. Oberthur; J. A. FORT, Esq., 69, Kingsgate Street, Winchester (gr. Mr. G. Cousins), was placed 2nd. In a similar class, but for white and yellow varieties only, Col. DICKINS again won the 1st prize, with grand blooms, having excellent plants of Godfrey's Eclipse, C. H. Curtis, and Mrs. F. Judson; Mr. FORT was again 2nd. Mr. A. TAYLOR, Hillside Terrace, Winchester—an amateur—had much the best naturally-grown specimens, and received the 1st prize. In the single specimen class without any restrictions, Col. DICKINS won the premier award with a magnificent plant of J. H. Silsbury.

CUT BLOOMS.

Although cut blooms are a great feature at this exhibition, the vase classes are not popular; only two being provided, and neither was well contested. There were three exhibits in the class for 36 blooms of Japanese varieties in not fewer than 24 sorts. Mrs. CLARK, Frensham Place, Frensham, Surrey (gr. Mr. C. Moore), won the 1st prize with high-quality blooms of the following as the leading sorts: Mrs. A. T. Miller, Maud Jefferies, Master James, Pockett's Crimson, Bessie Godfrey, Lady Talbot, F. S. Vallis, Hon. Mrs. Lopes, W. Mease, J. H. Doyle, Purity, and Leslie Morrison; MATTHEW HODGSON, Esq., was placed 2nd; and BERNARD HANKEY, Esq., Fetcham Park, Leatherhead (gr. Mr. Higgs), was a good 3rd.

In the class for 24 Japanese blooms five competed, the premier award being won by Captain F. J. DALGETY, Lockerley Hall, Romsey (gr. Mr. W. Baxter), for full-sized, even, fresh examples of popular varieties well staged; Mrs. CHRISTIE, Ribsdon, Windlesham (gr. Mr. W. Wilson), was awarded the 2nd prize, her display being quite close in point of merit to the 1st prize exhibit. For 12 Japanese blooms of distinct sorts, W. GARTON, Esq., Sarisbury Court, Southampton (gr. Mr. D. Edwards), excelled with desirable specimens of well-known sorts; 2nd, J. RIDLEY SHIELD, Esq., Carden, Alresford (gr. Mr. Rose).

Incurved varieties were, as usual, extremely well represented. For the premier prize of £5 for 36 blooms in not fewer than 24 varieties, J. B. HANKEY, Esq., led with typical blooms of Clara Wells, Emblème Poitevine, Lady Isabel, Amber Beauty, Buttercup, Daisy Southam, Duchess of Fife, Frank Trestian, and Frank Hammond, staged in the best manner by Mr. Higgs, who is one of the ablest growers of incurved Chrysanthemums; Mrs. CHRISTIE was placed 2nd with a less even set, although many of the blooms were unusually large and all were well arranged; PANTIA RALLI, Esq., Ashted Park, Epsom, (gr. Mr. J. Hunt), followed closely and secured the 3rd prize.

The Countess of NORTHBROOK, Stratton Park, Micheldever (gr. Mr. A. J. Henderson), won the 1st prize for five blooms of any white variety shown in a vase, with remarkable examples of Mrs. W. Judson, of purest white and of faultless form; JOHN LIDDELL, Esq., Sherfield Manor, Basingstoke (gr. Mr. R. Learmouth), was 2nd, with Mme. C. Nagelmackers.

Single Chrysanthemums arranged in vases are

always a feature at Winchester. For six vases seven competed, A. P. RALLI, Esq., Twyford, Winchester (gr. Mr. J. Hughes), winning the 1st prize with choice examples of Sylvia Slade, Roupell Beauty, White Pagram, and Mrs. Kitson; A. H. EVANS, Esq., Harris Hill, Newbury (gr. Mr. C. Smith), was a close 2nd.

Classes open only to ladies were numerous and keenly contested. Mrs. ARTHUR BIDE, Alma Nurseries, Farnham, showed the best dinner table decoration. Mrs. LADHAMS, Shirley, Southampton, also won a 1st prize for a dinner table decoration.

Vegetables were shown unusually well. W. H. MYERS, Esq., Swanmore Park, Bishop's Waltham (gr. Mr. G. Ellwood), secured the premier award with high-class produce in both Messrs. Sutton's and Messrs. Toogood's classes for six dishes.

NON-COMPETITIVE EXHIBITS.

Messrs. E. HILLIER & SON, Winchester, showed Apples of superb quality, backed up with Carnations, Begonias, and Shrubs. (Gold Medal.)

Mr. MYERS received a Silver Medal for an attractive display of Apples, the fruits being remarkably well coloured. Messrs. TOOGOOD & SON, Southampton, exhibited vegetables. Mr. FAY showed Carnations. Mrs. FLIGHT, Cornstiles, Twyford, Winchester (gr. Mr. Neville), showed Japanese and Incurved Chrysanthemums of excellent quality. Mr. E. J. WOOTEN, Knowle Lodge, Fair Oak, Eastleigh, exhibited a collection of Carnations.

CHESTER CHRYSANTHEMUM.

NOVEMBER 16, 17.—The Chester Paxton Society holds an interesting and instructive display of Chrysanthemums and other flowers annually in the magnificent rooms of the Town Hall. The cut flowers are arranged chiefly in vases stood on white cloths. There are also beautifully-arranged dinner tables, and this year a new feature was seen in an imposing display of Japanese Chrysanthemum blooms, standing well apart, interspersed with dried grasses, berries, and highly-coloured vine leaves. The exhibitor was the Duke of WESTMINSTER (gr. Mr. N. F. Barnes). The display was awarded the large Gold Medal. Messrs. DICKSONS, Chester, also received a Gold Medal for a tastefully-arranged bank of Chrysanthemums in many forms, relieved with Bamboos and Palms.

In the competitive section 60 classes are devoted to hardy fruits.

For six varieties of dessert Apples, the Rev. L. GARNETT was awarded the 1st prize, having well-coloured fruits.

In the class for 12 varieties of kitchen Apples, Col. THOS. GEE (gr. Mr. P. Greene), was awarded the 1st prize.

The best exhibit of 24 varieties of Apples and Pears was displayed by PHILIP YORKE, Esq. (gr. Mr. G. Aitken). Rev. L. GARNETT won in the class for six dishes of dessert Pears.

CUT BLOOMS.—The only class for Chrysanthemums shown on boards is for 12 Japanese blooms in not fewer than nine varieties. W. DRENSFIELD (gr. Mr. W. May), won the 1st prize, having extra choice blooms of J. H. Silsbury and Hon. Mrs. Lopes.

Sir GILBERT GREENALL, Bart. (gr. Mr. C. Goves), excelled in the class for 18 blooms of Japanese Chrysanthemums in six varieties shown in six vases, for 12 Japanese blooms shown in two vases, and for five Incurved varieties. For five blooms of one variety, Mrs. THOMPSON (gr. Mr. J. Fleet) was well ahead with extra fine blooms of F. S. Vallis.

For six vases of naturally-grown trusses and for six vases of single varieties, A. PETCAIRN CAMPBELL, Esq., led in each class. The 1st prize exhibit in the class for a group of single varieties was worthy of much admiration, and reflected great credit on the exhibitor, Major MACGILLYCUDDY (gr. Mr. E. Stubbs). In the class for a representative group, T. GIBBONS FROST, Esq. (gr. Mr. T. Gilbert), also had a noteworthy combination.

In addition to the non-competitive groups already mentioned, Messrs. CLIBRANS received a small Gold Medal for Chrysanthemums; Mr. J. FRANCIS a Bronze Medal for a group of Cactaceous plants; The BRITISH COLUMBIAN GOVERNMENT exhibited Apples; and Messrs. MCATTIE showed Palms, fruit, and Chrysanthemums.

LINNEAN SOCIETY.

NOVEMBER 17.—Mr. W. C. Worsdell exhibited specimens of Maize showing androgynous inflorescences, from Pretoria, South Africa; Dr. Stapf spoke on the probable derivation of Zea Mays from a species of Euchlana.

Prof. J. W. H. Trail, F.R.S., exhibited specimens and a lantern-slide of a remarkable form of Rubus Ideus, distributed over a considerable district in Aberdeenshire, in which the normal number of leaflets was increased by an extra basal pair, approaching the leaf of the Suberecti group of fruticose Rubi.

The general secretary showed a monstrous Pear similar to those figured by Dr. Masters in his *Vegetable Teratology*, which had been picked up under a Pear tree in a Holloway garden by Mr. A. H. Williams.

Prof. G. Henslow read a paper on "A Theoretical Origin of Plantago maritima, L. and P. alpina, L. from P. Coronopus, L. Vars.," of which the following is an abstract:—

This suggestion arose from the presence of P. maritima around the erection of faggots for condensing the brine of the Salt-spring of Bad Nauheim, which is some 240 miles from the nearest coast. For M. Lesage proved that fleshiness of maritime plants was the direct result of the presence of salt. P. Coronopus has many varieties, and all the characters upon which they are based are very variable; forms approximating the above species are already named. Lastly, Hoffmann proved by experiment that P. alpina is identical with P. maritima.

Prof. Henslow then spoke on the subject of his second paper: "A Theoretical Origin of Monocotyledons from Aquatic Dicotyledons, through Self-adaptation to an Aquatic Habit—being supplementary observations to a previous paper (*Journ. Linn. Soc., Bot.* xxix. (1892), p. 485)."

He stated that the general belief now prevalent is that Monocotyledons were descended from Dicotyledons, but no other writer appears to trace them to an aquatic habit. He drew attention to a large number of coincidences, in addition to those in his former paper. "They collectively illustrate the general degeneracy of the Class Monocotyledons. With regard to roots, the arrest of the primary root, and dissociation of the germinal tissue of the root-cap, is shown by experiment to be due to water; as is also the production of lacunae and reduction of strengthening tissues. Recent studies in the anatomy of the stem show a close agreement with aquatic Dicotyledons; while experiments prove the degenerating effect of even a moist atmosphere. The dissected type of foliage of submerged leaves of aquatic Dicotyledons has been proved experimentally to be directly caused by water, and explains the dissected type of foliage seen in Palms and certain Aroids. Embryological investigations have educed many coincidences in the minutest anatomical structure of the nucleus and embryo-sac. The conclusions arrived at are: (1) Coincidences are innumerable in all parts of Monocotyledonous plants with aquatic Dicotyledons. (2) Experimental verification now covers and explains a large proportion of these coincidences. (3) Terrestrial Monocotyledons retain by heredity many of the aquatic characters acquired by their ancestors when living a hydrophytic life; but they are now readapted to a life in air."

NEWCASTLE-ON-TYNE AND DISTRICT CHRYSANTHEMUM.

NOVEMBER 16, 17.—The annual exhibition was held in the Town Hall and Corn Exchange, Newcastle, on these dates. The classes for cut blooms were well filled, and the flowers generally were of a better quality than at last year's exhibition. Plants were again a great feature, and the vegetable classes brought the pitmen into keen competition.

A. E. BAINBRIDGE, Esq., Lynwood, Jesmond (gr. Mr. T. Bell), won the cup for the third time in succession offered for a group of Chrysanthemums and foliage plants arranged for effect. The cup thus becomes his property.

Another cup was also won outright by A. B. COLLINGWOOD, Esq., Lilburn Towers, Wooler (gr. Mr. Lovell), for table decorations.

Amongst non-competitive exhibits was a fine group consisting principally of well-flowered plants of Vanda ceculea, Epidendrum vitellinum, Oncidium tigrinum, well-flowered Calanthe Veitchii, Cattleyas in variety, and ornamental

foliage and other flowering plants, shown by Lord RIDLEY, Blagdon Hall (gr. Mr. Perry).

Mrs. CLAYTON, The Chesters (gr. Mr. Cocker), showed a large group of Cyclamen and small plants of winter-flowering Begonias.

In the competitive classes the 1st prize for 12 vases of Japanese Chrysanthemums in not fewer than 12 varieties, three blooms in each vase, was won by Capt. LAYCOCK, Wiston, Bawtry, Notts (gr. Mr. G. W. Musk), thus winning the cup for the second year in succession. He showed good blooms of Reginald Vallis, Mrs. A. T. Miller, Marquis of Northampton, F. S. Vallis, Mrs. W. Knott, and others. 2nd, F. W. JAMESON, North Ferriby (gr. Mr. G. Jennings).

The best exhibit of six vases of Chrysanthemums in not fewer than six varieties was shown by C. LACY THOMPSON, Esq., F. W. JAMESON, Esq., being placed 2nd; and the best four vases of Japanese Chrysanthemums by F. W. JAMESON, Esq.; 2nd, Captain LAYCOCK.

H. F. BULMAN, Esq., Lintz Green (gr. Mr. T. Gliddon), won the 1st prize in the class for three blooms of a white variety of Japanese Chrysanthemums with finely-finished blooms of Mrs. A. T. Miller.

In the similar class for three blooms of a yellow variety Capt. LAYCOCK was placed 1st, and this exhibitor also excelled for three Japanese blooms other than white or yellow. Capt. LAYCOCK was also successful in the classes for four vases of Incurved Chrysanthemums in not fewer than four varieties and for two vases of Incurved varieties.

The single-flowered classes for plants not disbudded was keenly contested, and they made an attractive display. Capt. LAYCOCK again leading.

For a group of Chrysanthemums and other flowering and foliage plants A. E. BAINBRIDGE, Esq. (gr. Mr. T. Bell), was placed 1st, and Messrs. CARNAGE & Co., Newcastle, 2nd.

Certain classes were restricted to the exhibitors in the counties of Northumberland and Durham. For four vases of Japanese Chrysanthemums in not fewer than four varieties, J. B. SIMPSON, Esq. was 1st and C. D. DOXFORD, Esq., 2nd.

The best four vases of Japanese Chrysanthemums grown within four miles of the Central Station were shown by A. E. BAINBRIDGE, Esq., and A. H. HIGGINBOTTOM, Esq., Newcastle (gr. Mr. J. E. Fairlie), was 2nd.

In the class for 10 kinds of vegetables, Mr. R. SHIELD, Swallow, won the 1st prize; 2nd, Mr. W. BROWN, Blaydon. Leeks and white and red Celery made a grand display. Each class was keenly contested by the local miners.

In the class for Grapes, Mr. T. BELL, scored with Muscat of Alexandria, and Mr. G. W. MUSK was 1st for a black variety finely finished.

WINDSOR CHRYSANTHEMUM.

NOVEMBER 17.—The 19th annual autumn show, held in the Albert Institute on this date, was of average merit. The great attraction is the King's Challenge Cup, a handsome trophy. Strange to say, on this occasion, there were but two entrants, and, according to the stipulations governing the competitions, there must be three competitors. The cup was therefore not awarded, but the cash prize that accompanied it was given. It is offered for six vases of five blooms each of any section of Chrysanthemums. Presumably it was the five blooms of one variety that caused the sparsity of entries. Next year it is suggested there shall be an alteration in the conditions, so that a keener competition may be expected. The hon. secretary, Mr. G. E. Kerr, works hard to make the society successful, and he is ably assisted by Mr. Arthur Turner (the chairman), and the committee.

Cut blooms were numerous and good. In the champion class, alluded to already, J. B. FORTESCUE, Esq., Dropmore, Maidenhead (gr. Mr. C. Page), staged very fine blooms of Lady Talbot, Purity, Hon. Mrs. Lopes (rich in colour), F. S. Vallis, R. Vallis, and Maud Jefferies; W. A. OWSTON, Esq., Langley House, Langley (gr. Mr. G. Spong), was placed 2nd with smaller blooms.

An interesting class was that for 18 Japanese blooms, distinct, arranged in a space of 5 feet by 3 feet, with the addition of foliage plants or cut foliage, the aim being to illustrate the value of large Chrysanthemum blooms in conjunction

with other subjects for decoration. Four entered, making an interesting and effective display. E. G. MOCATTA, Esq., Woburn Place, Addlestone, Surrey (gr. Mr. T. Stevenson), was placed 1st with exceedingly fine blooms of Lady Talbot, Mme. G. Rivol, Hon. Mrs. Lopes, Purity, and J. H. Silsbury, well displayed on a base of Ferns with the addition amongst the blooms of Spiraea Thunbergii, and Osmunda regalis; 2nd, Mrs. GERALD GOODLAKE, Hawthorn Hill (gr. Mr. W. H. Hearn), with good blossoms, but not effectively disposed.

Another interesting class which evokes a keen competition, and is certainly a desirable one, is that for 12 blooms arranged in one vase along with any kind of foliage. Eight competed, making a fine display. Mr. MOCATTA won the premier prize with a grand exhibit of the Japanese variety Purity, effectively arranged with suitable foliage. Mrs. GERALD GOODLAKE exhibited extra large blooms, a trifle stale, of F. S. Vallis, and secured the 2nd place; 3rd, Miss L. OPPENHEIM, Hawthorn Hill (gr. Mr. G. L. Crowsley).

Mr. FORTESCUE was placed 1st for 12 Incurved and the same number of Japanese varieties, distinct, having desirable specimens of the following varieties: (Incurved) Romance, Duchess of Fife, W. Pascoe, Emblème Poitevine, Fred. Palmer, and Clara Wells; (Japanese) Lady Talbot, Edith Jameson, Pickett's Crimson, Mr. C. Penfold, Hon. Mrs. Lopes, and Mrs. J. C. Neil; E. IVESON, Esq., Charter's Towers, Ascot (gr. Mr. F. Capp), was placed 2nd with smaller blooms.

Eight competed in the class for 12 Japanese blooms, distinct. Sir ROBERT HARVEY, Langley Park (gr. Mr. H. Bowyer), was awarded the 1st prize.

For six single-flowered varieties, arranged in vases, eight competed. Mrs. E. B. FOSTER, Clewer Manor (gr. Mr. W. Coles), was placed 1st with effective sorts, nicely displayed. In a similar class for decorative varieties, except singles, Mr. STEWARD SMITH, Englefield Green, won the 1st prize.

For a group of decorative Chrysanthemum plants, arranged in a semicircle 8 feet by 4 feet, a Challenge Cup with a cash prize as offered as the 1st prize. Five competitors took part. Mr. F. RICARDO secured the trophy, with well-grown plants so arranged as to display their blooms perfectly; 2nd, P. NEELKE, Esq., Woodlee, Virginia Water (gr. Mr. G. Baskett).

Carnations in pots and vases were an added attraction to the Chrysanthemums. Mr. RICARDO secured several of the premier awards with attractive blossoms.

Exhibits of fruits and vegetables were good and numerous.

LEEDS PAXTON.

NOVEMBER 18, 19.—The annual exhibition held on these dates in the Victoria Hall, resulted in a good floral display, the entries numbering 154 more than at last year's exhibition. The opening ceremony was performed by the Lord Mayor (Mr. W. Middlebrook, M.P.), and there was a good attendance of the public. In the group classes the best exhibit arranged on a space of about 70 square feet was shown by F. H. FULFORD, Esq., Headingley Castle (gr. Mr. J. Harrison), whilst E. H. FORSTER, Esq., Horsforth (gr. Mr. H. Winterburn), was awarded the 1st prize for a group occupying 60 square feet, Mr. FULFORD being placed 2nd. There were several challenge cups offered in the cut bloom classes. One was presented by Ald. W. Penrose-Green, for 36 blooms of Chrysanthemums, including 18 Incurved and 18 Japanese varieties. It was won by A. JAMES, Esq., Rugby (gr. Mr. A. Chandler); 2nd, G. H. DRAKE, Esq., Cardiff. Mr. JAMES also excelled in the class for 12 Japanese blooms in not fewer than six varieties, but he was 2nd to Mr. DRAKE in the class for 12 Incurved Chrysanthemums in not fewer than six varieties. Other prize winners in the cut-bloom classes included the Marquis of RIFON (gr. Mr. G. E. Thomas), C. WATSON, Esq. (gr. Mr. H. Carter), W. D. CLIFF, Esq. (gr. Mr. W. N. Hague), and T. ARTON RAWDON, Esq. (gr. Mr. F. Howland). The local classes were well contested; the silver challenge cup offered by Mr. T. G. Mylchreest for the best collection of 24 blooms being won by Mr. PENROSE-GREEN; Mr. W. D. CLIFF, Meanwood Towers, was another successful exhibitor in the local classes.

LAW NOTES.

FAILURE TO NOTIFY DISEASE.

At the Farnham Petty Sessions on Thursday, a firm of nurserymen were summoned for failing to notify an all-gird outbreak of American Gooseberry-mildew on their premises as required by the American Gooseberry-mildew Order, 1909. The evidence showed that in May or June last Mr. G. C. HUGH, an inspector of the Board of Agriculture, visited the defendants' nurseries, but found no sign of American Gooseberry-mildew. On August 30 he paid another visit, and in the Gooseberry plantation he found that the shoots of a number of bushes in an area of about five rods had been cut back, and also that they appeared to have been sprayed with sulphur. In the remainder of the plantation he found that the disease existed over an area involving thousands of Gooseberry bushes. As no notification of the outbreak had been served, the Board of Agriculture wrote for an explanation, and the reply given was that the defendants thought the bushes were affected only by common mildew. The Board were unable to accept that explanation, and felt compelled to institute proceedings. A member of the defendant firm stated that they had no idea that there was any American mildew on their premises. The cutting back was done upon expert advice as a preventive. Spraying with Hop sulphur was also adopted, and it was believed that the treatment was successful. The Chairman said that the justices recognised that the offence was a serious one, but the case was the first one of the kind that had been brought before them, and they imposed a fine of £1 and costs.

CLAIM FOR COMPENSATION.

At the Croydon County Court, on Thursday, before his Honour Judge Harrington, Arthur Horton, of 39, Maberley Road, Upper Norwood, brought an action under the Workmen's Compensation Act against the Crystal Palace Company. The applicant was a gardener's labourer, and, on February 19, he was engaged in felling an Oak tree in the Crystal Palace grounds, when a bough fell and injured him. He was paid compensation at the rate of 11s. 9d. a week until July, when the injury was stopped. It was contended that he was still suffering from heart trouble, which it was suggested was traumatic, due to the accident.

His Honour, having heard counsel on both sides, said the case was one which ought to have gone to a medical referee, who could have examined the applicant and formed an independent opinion as to his condition. He came to the conclusion that the applicant had failed to make out a case that he was suffering from neurasthenia, or that, if he was suffering from it, it was due to the accident. Judgment was given for the defendants, with costs.

Obituary.

KAREL VAN GEERT.—We regret to announce the death on the 12th inst., at Antwerp, Belgium, of Mr. Karel van Geert, the well-known nurseryman of Antwerp and Calmpthout, aged 61. He succeeded his father, who founded the business, in the management of this fine nursery, which adjoined the Calmpthout station on the railway leading from Antwerp to Rotterdam. Hardy trees and shrubs were the leading features of the firm. The older nursery at Antwerp is now built over, but the memory of it is retained in the name of the street which occupies the site, viz., Rue van Geert. The late Mr. van Geert was one of the best judges of hardy deciduous trees, Conifers and evergreen shrubs in Europe, while his quiet, courteous and kindly manner endeared him to his many friends.

DAVID PEARCE PENHALLOW.—From our American contemporary *Horticulture*, we learn of the death, on October 26, of Professor David Pearce Penhallow, Professor of Botany at McGill University, Montreal, since 1883. Deceased was born at Kittery Point, Me., May 25, 1854.

WILLIAM ROGERS FISHER.—The many friends of Professor Fisher learned with deep regret of his somewhat sudden death on the morning of Sunday, the 13th inst., as recorded in the last issue of the *Gardeners' Chronicle*. For the past two years, his health had been the cause of some anxiety to his friends, but by the observance of a rigorous diet he seemed to be getting stronger, and probably few knew how bravely he was battling with a dangerous complaint. On the 16th, he was laid to rest in the churchyard of Wolvercote, near Oxford, whither his remains were followed by many colleagues and students. The Royal English Arboricultural Society, of which he was a past president, was represented by Professor Somerville. Born in 1846 in New South Wales, Mr. Fisher early in life came to England, and joined St. John's College in the University of Cambridge, where he applied himself to the study of mathematics with so much success that in 1867 he secured a good place in the pass list. Graduating B.A. in the same year, he held for a short time a mathematical mastership at Repton, but in 1869 his interests were so attracted by the subject of Forestry that he competed in the examination for entrance to the Indian Forest Service, and came out an equal first. His period of probation was first passed at the Forest School of Nancy, but on the outbreak of the Franco-German war, he was, with other English students, transferred to Edinburgh, where he applied himself more particularly to the study of Botany, a subject in which he always continued to take much interest. Proceeding to India in 1872 he was first stationed in Bengal, being subsequently transferred to Assam, where, from 1874 to 1878, he worked with much advantage to the State. In the latter year, his exceptional merits were recognised by his receiving the appointment of Deputy Director of the Forest School at Dehra Dun, of which important technical college he subsequently became Director. In 1890, when the Government of India determined to add a department of Forestry to the Royal Indian Engineering College at Cooper's Hill, Mr. Fisher was attached to the teaching staff of that institution, and there he remained till 1905, when, with the students in residence, he was transferred to the new School of Forestry in the University of Oxford. Brasenose College offered him the privilege of membership, and the University conferred upon him the degree of M.A. Mr. Fisher as a teacher, a writer, and a technical adviser, has left an enduring mark on the progress of scientific Forestry. He gave of his best to the relays of young men who came under his influence in the classroom and the forest, and he must have been an indifferent student who was not soon infected with some of the enthusiasm of his stimulating teacher. Every year he conducted a party of students through selected forest districts of France, and these educational excursions never failed to make a deep impression on those who were privileged to join them. Primarily arranged for the probationers for the Indian Forest Service, these French tours were not infrequently taken part in by landowners and others, and some of our most enthusiastic advocates of advanced Forestry can date their realisation of the true meaning of Forestry to one or other of these delightful trips. Scarcely less interesting were the pleasant outings under Mr. Fisher's guidance to Oaxshot, Bagshot, Woburn, and other places within reach of Cooper's Hill or Oxford. In his spare time Mr. Fisher was much employed by private landowners, who desired to put their woods under improved management, and many thousands of acres of woodland in England and Scotland are now being advantageously worked in conformity with plans which he prepared. He also gave much assistance to municipal corporations, such as Leeds, Manchester, and Liverpool, that were interesting themselves in the afforestation of the catchment areas of their water supplies. A matter in which he took much interest of recent years was the Arboretum of the Royal English Arboricultural Society at Tubney on an estate belonging to Magdalen College. This collection of trees had its origin in a gift of seedlings exhibited by the Hon. Mark Rolls at Park Royal, and afterwards handed over to the Society. Mr. Fisher gave the plants accommodation for a year or two in his nursery at Cooper's Hill, and it was he who subsequently arranged with Magdalen College for the establishment of the Arboretum for their reception. Mr. Fisher's services to the

cause of Forestry have received many marks of public recognition. For two years, 1904-5, he filled the office of President of the Royal English Arboricultural Society, in whose welfare, till the last, he took the deepest interest. In 1907 he served on the Departmental Committee on Irish Forestry, and at the time of his death he was a member of the Rural Education Conference. Outside of his work at the School of Forestry nothing absorbed his attention so much as the *Quarterly Journal of Forestry*, which he was largely instrumental in founding in 1907, and of which he was, ever since its inception, joint or sole editor. Mr. Fisher's contributions to the literature of forestry have been numerous and valuable. His two largest works are volumes iv. and v. of Schlich's *Manual of Forestry*, the one dealing with Protection, and the other with Utilization. Earlier in life he wrote an excellent text book on *Forest Botany*, designed primarily for use in the school at Dehra Dun, but well worthy of the larger circulation which it gained. His intimate acquaintance with Continental languages enabled him to undertake the task of bringing out an English edition of the *Vocabulaire Forestier*, which, however, has not yet been published. He also translated Schimper's great work on *Plant Geography*. Few men suc-



THE LATE PROFESSOR FISHER.

ceed, as Mr. Fisher succeeded, in attracting so many friends and making so few enemies. Of him, in fact, it may be truly said that he had not one. Few also have given so whole-heartedly of their best to young men who were entering the profession that Mr. Fisher loved so dearly. His place will be hard to fill, but his memory will long remain green in the hearts of all who knew him. *Wm. Somerville.*

DR. THEODORE COOKE.—The death of Dr. Theodore Cooke, C.I.E., formerly a member of the Bombay Educational Department, occurred on November 5. In 1865 Dr. Cooke was appointed Principal of the Civil Engineering College at Poona. In 1891 the Botanical Survey of India was organised, and Dr. Cooke was placed in charge of the Survey operations in Western India. Encouraged—states *Nature* by Sir George King, then Director of the Survey, Dr. Cooke made preparations for the production of the "Flora of the Presidency of Bombay." Unexpected difficulties, however, prevented the realisation of the scheme, and when Dr. Cooke retired in 1893 his energies found an outlet in a post to which he was appointed at the Imperial Institute. Some years later he settled at Kew, and commenced working in the Herbarium on the preparation of the local flora of Bombay. The first part was published in 1901, and the 7th and concluding part appeared about two years ago. On its completion, Dr. Cooke continued to work in the Herbarium, assisting as a volunteer in the preparation of the *Flora Capensis*, edited by Sir W. T. Thiselton Dyer.

A. WEBSTER.—We regret to record the death of Mr. Webster, Superintendent of the West Park, Wolverhampton, after a long illness. Mr. Webster was foreman for Mr. Vertegans, of the Chad Valley Nurseries, Edgbaston, who laid out the West Park. The late Mr. William Thomas was the first superintendent, and, on the completion of the park, Mr. Webster was appointed Mr. Thomas's assistant. On the death of Mr. Thomas in 1895, Mr. Webster was appointed Superintendent of the West and East Parks, this latter having been laid out by himself. Deceased always contributed exhibits to the Wolverhampton Flora Fêtes, which are held in the West Park, and he possessed several gold medals awarded for these exhibits.

HENRY ALFRED STRATTON.—We regret to record the death of Mr. H. A. Stratton, which occurred at his residence in Mackenzie Road, Beckenham, on the 21st inst., from heart failure following pneumonia. Mr. Stratton, who was born on October 31, 1860, entered the service of the *Gardeners' Chronicle* in 1880, and until his retirement, through ill-health, in July, 1899, he was principal book-keeper, and on more than one occasion took charge of the publishing department. He had several serious illnesses, and his life was despaired of more than once, but his fine constitution served him in good stead. In 1901 he recovered from a dangerous malady sufficiently to undertake a post at the *Athenæum*, and he was in the service of that paper at the time of his death. He was a good and trustworthy man, and his friends will miss a genial and pleasant companion.

THE WEATHER.

THE FOLLOWING SUMMARY RECORD of the weather throughout the British Islands, for the week ending November 19, is furnished from the Meteorological Office:—

GENERAL OBSERVATIONS.

The weather was extremely unsettled in the earlier half of the week, with heavy rain in nearly all districts. Later on a decided improvement took place in the southern parts of the Kingdom, while frequent showers of sleet, snow, and hail occurred in the north and east. Continuous snow occurred on the Kentish coast on Thursday, but melted on reaching the ground. Thunderstorms prevailed at Valencia on Sunday, at some southern stations on Monday and Tuesday, and at Hillington and Morpeth on Friday.

The temperature was below the average, the deficit being nearly 6° in Scotland N. and Ireland S., about 5° in several other districts, and about 4° in the English Channel and over northern and central England. The highest of the maxima, which were mostly recorded either on the 13th or 14th, ranged from 58° in England E. to 51° in Ireland N. and to 47° in Scotland N. and E. The lowest of the minima occurred on the 17th generally, but on the 19th in the north and north-west, and ranged from 18° in England S.E., 19° in the Midland Counties, and 20° in Ireland S., to 28° in England N.E. and to 37° in the English Channel. The lowest grass readings were 10° at Llangamarch Wells, 14° at Kew, and 15° at West Linton, Tunbridge Wells, and Aspatria. In several other localities the readings were below 20°.

The mean temperature of the sea.—On our southern and south-western coasts, as well as off the north-east of England, the water was warmer than during the corresponding week of last year, elsewhere it was rather colder. The means for the week ranged from 54° at Plymouth to 41° at Pennan Bay and Kirkwall.

The rainfall was more than the normal except in Ireland and in Scotland W., the excess being large in most districts. Falls of more than an inch were experienced in places over a large area on the 13th, as much as 1.70 inch at Dumfries, and 1.22 inch at Brighton. At Guernsey 1.23 inch accompanied a severe thunderstorm on the 15th.

The bright sunshine exceeded the average generally, but was only equal to it in Scotland W., and below it in Scotland N. and E., and the English Channel. The percentage of the possible duration ranged from 33 in England S.E. and 85 in England E. and the Midland Counties to 22 in England N.W., and to between 19 and 12 in Scotland.

THE WEATHER IN WEST HERTS.

Week ending November 23.

The coldest weather since January.—This was the third cold week in succession, and the coldest of the three. In fact, there has been no such cold weather since the fourth week in January, due to persistent low readings throughout the whole week. On the two coldest nights the exposed thermometer registered 16° of frost. The ground is now as much as 6° colder at 2 feet deep, and 8° colder at 1 foot deep, than is seasonable. The temperature at 1 foot deep is at the present time lower than any previously recorded here in November during the last 25 years. The moisture measurement from rain, snow, and fog during the week only amounted to about one tenth of an inch. There has been some slight percolation through both soil gauges each day. The sun shone on an average for 4 hours 28 minutes a day, which is nearly three times the mean duration for the middle of November. The winds were rather light at the beginning of the week, but the last four days have been very calm. The mean amount of moisture in the air at 3 p.m. fell short of a seasonable quantity for that hour by 6 per cent. *E. M., Berkhamsted, November 23, 1910.*

MARKETS.

COVENT GARDEN, November 23.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in one day.—Eds.]

Cut Flowers, &c.: Average Wholesale Prices.

s.d. s.d.	s.d. s.d.
Azaleas, white, per dozen bunches	4 0-5 0
Bouvardia, p. doz. bunches	4 0-5 0
Camellias, per doz. bunches	2 0-2 6
Carnations, p. doz. blooms, best	1 6-3 0
American varieties	2 0-3 0
— smaller, per doz. bunches	12 0-15 0
Chrysanthemums, per doz. bunches	6 0-10 0
— larger per doz. blooms	1 6-3 0
Gardenias, p. doz. Hyacinth (Roman), p. doz. bunches	3 0-4 0
Lapageria, white, per dozen	2 0-3 0
Lilium Anatolium, per bunch	1 6-2 6
— longifolium	2 0-2 6
— lancifolium rubrum	1 6-2 0
— lancifolium album	1 6-2 0
Lily of the Valley, p. doz. bunches	9 0-12 0
— extra quality	12 0-18 0
Marguerites, doz. bunches, white	1 6-2 0
Marguerites, per doz. bunches, yellow	3 0-4 0
Narcissus, Paper White, per pad	10 0-12 0
Mimosa, per pad	6 0-8 0
Orchids, Cattleya, per doz.	10 0-12 0
— Cypripediums, per doz. blooms	2 0-3 0
— Odontoglossum, per dozen blooms	2 6-3 0
Pellargonium, Zonal, double scarlet	6 0-8 0
Roses, 12 blooms, Niphetos	2 0-2 6
— Bride'smaid	2 0-3 0
— C. Mermet	2 0-3 0
— Kaiser Ang. Victoria	2 0-3 0
— Liberty	3 0-5 0
— Mme. Chateau	3 0-5 0
— Richmond	3 0-5 0
— Sunset	2 0-3 0
— The Bride	2 0-3 0
Tuberose, p. gross	4 0-5 0
— per doz. blooms	0 5-0 6
Violets, per doz. bunches	2 0-3 0
— Parma, bunch	2 6-3 0

Cut Foliage, &c.: Average Wholesale Prices.

s.d. s.d.	s.d. s.d.
Adiantum cuneatum, per dozen bunches	6 0-8 0
Asparagus plumosus, long trails, per doz. bunches	3 0-6 0
— medium, doz. bunches	6 0-9 0
— Sprenger	6 0-9 0
Croton leaves, per dozen bunches	6 0-9 0
Ferns, per dozen bunches (English)	3 0-4 0
— (French)	4 0-5 0
Hardy foliage (various), per dozen bunches	3 0-5 0
Ivy leaves, bronze long trails per bundle	1 0-1 6
— short green, per doz. bunches	1 0-2 0
Moss, per gross	3 0-4 0
Myrtle, doz. bchs. (English)	4 0-6 0
— French	1 0-1 6
Smilax, per dozen trails	2 0-3 0

Plants in Pots, &c.: Average Wholesale Prices.

s.d. s.d.	s.d. s.d.
Aralia Sieboldii, p. dozen	4 0-6 0
— larger specimens	9 0-12 0
— Moseri	6 0-8 0
— larger plants	12 0-18 0
Arancaria excelsa, per dozen	12 0-30 0
— large plants, each	3 6-5 0
Asparagus plumosus nazus, dz.	9 0-12 0
— Sprenger	6 0-9 0
Aspidistras, p. dz., green	15 0-24 0
— variegated	24 0-36 0
Begonia Gloire de Lorraine, p. dz.	8 0-12 0
— Turford Hall, white	12 0-24 0
Chrysanthemums in pots	9 0-12 0
— specials	18 0-24 0
Cocos Weddelliana, per dozen	18 0-30 0
Crotons, per dozen	12 0-18 0
Cyclamen, per doz.	9 0-12 0
Cyperus alternifolius, per doz.	5 0-6 0
— laxus, per doz.	4 0-5 0
Erica gracilis, p. dz.	9 0-12 0
— gracilis nivalis	9 0-12 0
— hyemalis	10 0-15 0
Euonymus, per dz., in pots	4 0-8 0
Euonymus, from the ground	3 0-6 0
Ferns, in tubs, per 100	5 0-12 0
— in small and large pots	12 0-20 0
— in 48's, per dz.	5 0-8 0
— choicest sorts, per dozen	8 0-12 0
— in 32's, per dz.	10 0-15 0
Ficus elastica, per dozen	8 0-12 0
— repens, per dozen	4 0-6 0
Isolepis, per dozen	3 0-4 0
Kentia Belmoreana, per dozen	15 0-21 0
— Fosteriana, per dozen	18 0-24 0
Lantana borbonica, per dozen	15 0-18 0
Lilium longiflorum, per dz.	12 0-15 0
Marguerites, white, per dozen	6 0-8 0
Selaginella, per dozen	4 0-6 0
Solanums, per dozen	8 0-10 0
Spiræa (pink) (white)	12 0-15 0

Fruit: Average Wholesale Prices.

s.d. s.d.	s.d. s.d.
Apples (American), per barrel	22 0-24 0
— Greening	22 0-24 0
— Baldwin	22 0-24 0
— York Imperial	22 0-24 0
— Albemarle	24 0-30 0
— (Nova Scotian), per barrel	20 0-22 0
— Kings	20 0-22 0
— Winesap	10 0-12 0
— Ribston Pippin	20 0-22 0
— Blenheim Pippin (Canarian)	20 0-22 0
— Newtown Pippin, per case	8 6-10 0
— 4 tiers	6 6-8 0
— (Oregon), Newtown Pippin	10 6-12 6
Apples, Wenatchee Valley, per case	10 0-12 6
— (English), Lord Derby, per bushel	5 0-6 0
— Warner's King	6 0-6 6
— Cox's Orange Pippin, per bushel	6 0-10 0
— Bismack, per bushel	5 0-6 0
— Lane's Prince Albert, per bushel	4 6-5 0
— Bramley's Seedling, 1 bushel	6 6-7 0
— Ribston Pippin, bushel	4 0-4 6

Fruit: Average Wholesale Prices (continued).

	s.d.	s.d.		s.d.	s.d.
Apples, Blenheim			Nuts, Almonds, p.		
Pippin, per			bag	36	0 42 0
bushel...	6	0-8 0	— Chestnuts (Ital-		
— King of the			ian), per sack	22	0-24 0
Pippins	3	6 4 6	(Redmond), per		
— Pearn's Pippin	4	6 5 6	bag	10	0-16 0
— Northern			Hazeln, new,		
— Greening	4	0 —	per peck	3	0 —
— Graham	4	6-5 0	per cwt	48	0 —
— Prince Albert...	5	6 —	— sorted	55	0 —
— Newton Wonder	5	0-6 0	— Brazil, bag	32	0-34 0
Bananas, bunch:			— Coconut (Holl.)	10	0-14 0
— Doubles	11	0-14 0	— English Wal-		
— No. 1	9	0 —	nuts, per doz.		
— Extra	10	0-11 0	lbs.	7	0-8 0
— Giant	13	0 —	— Doubles, per		
— Red coloured...	4	0-5 6	doz. lbs.	12	0 18 0
— Red Doubles	8	0-9 0	— (French), Gre-		
— Loose, p. doz.	0	6-1 0	nobles, bags	8	6 11 6
Blackberries, peck	2	6 —	— English Cobs		
Cranberries, 90 qts.			per lb.	0	10-1 0
per case	11	6 —	— shelled, 1 lb.		
Dates (Tunis), per			box of Walnuts	1	4 —
doz. Cartons	4	9-5 0	— 1 lb. box Barcelona	9	6 —
Figs (Italian) boxes	0	8-1 0	Oranges (Jamaica),		
Grape Fruit, case:			per case (252)	10	0 —
— 66's			— (200)	10	6 —
— 60's			— (216)	11	6 —
— 64's	10	0-12 0	— New (Garucha),		
— 54's			per case (420)	21	0 —
Grapes (English),			— (714)	23	6 —
per lb.			— Jaffa, case (114)	7	0 —
— Black Alicante	0	8-1 0	Pears (California),		
— Muscat of Alex-			per case:		
andria	1	3-2 6	— Beurre Hardy	10	6 —
— Canon Hall Mus-			— Glou. Moreau	11	6 12 0
cat	2	6 4 0	— Winter Nelis	11	6 12 6
— Gros Colmar	1	0 1 9	— Favourite Beurre	9	6 —
— Black Alicante			— Doyenne du		
(Guernsey)	0	5-0 7	Comice	15	0 —
— Alameda (tinted),			— Bartlett	5	0-6 0
barrel	10	6-13 6	— Keifers, case	6	9-7 0
Lemons:			— (French), cases	3	0 3 6
— Malaga (400)	18	6 24 6	— Calmar, 4 sieve	3	6-4 6
— Messina (300)	16	0 20 0	— Calmar, 4 sieve	4	0 6 0
Melons, Spanish			— Dutch, stea-		
Bronze (24's)...	14	0 —	ming Mollies, per		
Mandarines, p. box			4 sieve	3	6 —
15's	1	0 1 6	— Persimmon, p.		
Medlars (English),			box	1	6 2 0
bushel	4	0-1 6	Pineapples,	2	3 3 6
— (French), p. b-			Pomegranates, per		
asket, 25 lbs.	1	0-5 0	case	1	9 2 3
			Quinces, p. box	6	0 —

Christmas Fruits and Preserves.

s.d. s.d.	s.d. s.d.
Figs, lb. packets, per doz.	5 0-5 0
— boxes, per doz.	3 0-5 0
— Natural, p. cwt.	27 6-30 0
— Taps, per cwt.	23 6-26 0
Nuts, Brazil, hand-picked, best, per cwt.	65 0-70 0
— Barcelona, hand-screened, per bag	37 6-40 0
— Alm. (Spanish), tagueta, per bag	48 0-50 0
— (Brazil), p. bag	44 0-46 0
Nuts, Macadamia, hand-picked, per bag	22 6-24 0
Dates, per cwt.	9 9-10 0
— (California), 11 3-12 0	
— (California), 12 6-13 0	
Metz Fruits, p. dz.: 1 lb. boxes	3 9-4 0
— 1 lb. boxes	6 6-7 0
— 1 lb. boxes	10 0-11 0
Mixed Fruits, per dozen	8 3-9 0
Plums, p. cwt., 1 lb. boxes, per dozen	9 0-10 0

Vegetables: Average Wholesale Prices.

s.d. s.d.	s.d. s.d.
Artichokes (Globe), per dozen	1 6-2 0
— ground-holes, 4 sieve	2 0-2 6
Aubergines doz.	1 6-2 0
Asparagus, Paris Green	3 6-5 0
Beans, Broad (French), per pad	2 6-3 6
— per packet	0 4-0 6
— Jersey, per lb.	1 0-1 6
Beetroot, bushel	1 6-2 0
Cabbages, tally	3 0-4 6
Carrots (English) — cwt.	2 6-2 9
— not washed	1 6-2 0
— (French), per dozen bunches	4 0-5 0
Cauliflowers, hamper (24-30)	2 0-3 0
Celery, per dozen	6 0-12 0
Chicory, per lb.	0 3-0 4
Corn-cobs (Indian corn)	1 3-1 6
Cucumbers, p. flat	6 6-8 0
Endive, per dozen	0 6-0 9
Herbs (sweet), packets, per gross	7 0-8 0
Horseradish, 12 bundles	12 0-14 0
Lettuce (French), Cos, per dozen	1 6-2 0
Mint, p. doz. bchs.	2 0-2 6
Mushrooms, p. lb.	1 0-1 6
Mushroom Broders	1 0-1 3
Mustard (French), per dozen packets	0 6-0 8
Onions, Dutch, bags	5 0-6 0
— Belgians, bags	5 0-6 0
— New Spanish, case	6 6-7 0
— (English), bag	5 6-6 6
— Shallots, per lb.	0 2-0 3
— Pickling, 4 sieve	2 0-2 6
Parsley, 4 sieve	1 6-2 6
Peas (French), per pad	4 0-5 0
Spouts, 4 bushel	2 0-2 6
Tomatoes: (English), per dozen lbs.	4 0-4 6
— small selected	3 6-4 0
— seconds	1 6-2 0
— (Guernsey), per dozen lbs.	3 0-4 0
— (Canary), per bundle of 4 cases	8 0-14 0
— (French), per dozen lbs.	4 0-5 0
— unwashed, per bag	2 0-2 6
— washed	2 6-3 0
Watercress, p. dz. bunches	0 6-0 6

REMARKS.—Apples: Both home-grown and imported Apples show a slight increase in value. Varieties packed in barrels are in better demand. Pears: The market is well supplied with both French and American varieties of Pears. Grapes: Prices for the best Grapes are firmer as supplies are decreasing. Tomatoes: English Tomatoes are unusually plentiful for this late period of the year and are selling freely. Tomatoes are arriving from the Canary Islands in larger quantities—these are selling slowly. Oranges: Fruits of the best quality are exceedingly scarce. Cobnuts: The supply is equal to the demand with a slight decrease in prices. Foreign Nuts show an increase in value which is likely to continue. Vegetables: Supplies have increased and the prices are lower. E. H. R., Covent Garden, November 23, 1910.

New Potatoes.

per cwt. s.d. s.d.	per cwt. s.d. s.d.
Kents—British Queen	4 0-4 6
Sharpe's Express	4 0-4 3
Felipse	3 9-4 3
Epique	3 6-3 9
May Queen	3 9-4 0
Bedfords—Up-to-Date	3 9-4 3
British Queen	3 9-4 0
Lincolns—Up-to-Date	3 9-4 0
King Edwards	4 0-4 6
Evergoods	3 6-3 9
British Queen	4 0-4 6
Up-to-Date	4 0-4 6
Sharpe's Express	3 6-4 0
Epique	3 6-3 6
Blacklands	3 3-3 6
Dunbars—Up-to-Date	5 6-6 0
Maincrop	5 6-6 0

REMARKS.—Trade is not quite so good, and prices remain about the same. The stocks in London show an increase during the past week. Edward J. Newborn, Covent Garden and St. Pancras, November 23, 1910.

DEBATING SOCIETIES.

STIRLING & DISTRICT HORTICULTURAL.

A good attendance, under the chairmanship of Mr. G. Petrie, assembled on November 8, to hear Mr. H. Arnold, Carron Hall, lecture on "How to keep a Greenhouse Gay all the Year Round." Mr. Arnold offered his remarks in a lucid and interesting manner, and the presence of those from a long distance was a compliment to his ability as a speaker, his lecture before the Association some years ago on "Wild Gardening" being still remembered with pleasure.

REDHILL AND REIGATE GARDENERS'.

The usual fortnightly meeting was held on November 8, at the Pentham Hall. The lecturer for the evening was Mr. A. E. Burgess, his subject being "Experimental Gardening." James I. of Scotland was probably the first to introduce a pleasure garden in Great Britain, but probably the first pleasure garden of modern times was established by Henry VIII., this at Sutton, Surrey. The lecturer gave the dates of introduction of some of the different fruits and vegetables. The Potato, he said, was first grown by the Spaniards in the sixteenth century, but not until the eighteenth century was it grown for food. The introduction of green vegetables helped largely to stamp out scurvy, which was so prevalent at one time. The lecturer concluded his remarks by dealing with the great improvements that had taken place in fruits and vegetables.

BRISTOL AND DISTRICT GARDENERS'.

The usual fortnightly meeting was held on November 10, at St. John's Parish Rooms; Mr. Garaway presided over a good attendance. Mr. Porter, of the Bath Society, gave a paper on "The Herbaceous Border." He recommended a situation with a back and a front, or a wall, preferably the former, with a south or west aspect. He said a soil of a light nature is best, and previous to trenching leaf mould and well-decayed manure should be incorporated with it. The lecturer gave a list of varieties suitable for planting, including tall, medium, and dwarf-growing sorts. Included amongst the former were Bocconia, Rudbeckia, Aconitum, Lyngium, Verbascum, Artemisia, Delphinium, Anemone, and Kniphofia, of those of medium height he enumerated Anchusa, Campanula, Cimicifuga, Thalictrum, Hemerocallis, Phlox, and Asters; whilst of dwarf flowers Incarvillea, Dictamnus, Saxifraga, Funkia, Montbretia, Isatis, and Ost. sylvatica are a selection.

CHELMSFORD & DISTRICT GARDENERS'.

The usual weekly meeting was held at the County Laboratories, Chelmsford, on November 18, about 70 members being present. The chair was taken by Mr. Curry, a local farmer. Mr. F. W. Shrivell, of the Agricultural and Horticultural Experimental Station, gave an address on "The Manuring of Kitchen Garden Crops."

PLYMOUTH GARDENERS'.

A meeting and exhibition was held on the 12th inst. at Mutley Grammar School, Plymouth. Mr. F. Andrews presided. There was a display of Chrysanthemums, also a competition for cu blooms restricted to under gardeners. Mr. R. W. Swan, gardener at Torr Hill, Ivybridge, read a paper on "Chrysanthemums." The lecturer dealt with the history and various types of this flower, and also gave some practical hints on its cultivation. Mr. W. Bennett gave some hints on the Chrysanthemum as a decorative flower.

CROYDON & DISTRICT HORTICULTURAL.

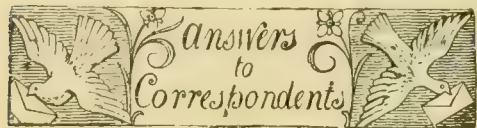
At this society's meeting on the 1st inst. Mr. J. Heal, of Messrs. Veitch's Nurseries, Chelsea, delivered a lecture on "Hybrids of Amaryllis." The lecturer brought under notice the whole family of Amaryllis, but dealt principally with the species of Hippeastrum. He said that in the early part of the last century the hybridising of these flowers first received attention, and what was considered a great achievement about 1824 was the successful crossings by Dean Herbert, who claimed to have 35 different crossings. Skipping a period of 50 years, during which time nothing eventful took place, Mr. Heal said that other cultivators specialised with them, especially Dutch horticulturists. It was at the establishment of one of these growers that the lecturer first acquired his enthusiasm, for on a business visit for Messrs. Veitch he observed several plants quite superior to any he had previously seen, and coming back with a few bulbs he set to work hybridising and selecting.

At the meeting of this society, on Tuesday, the 15th inst., the hon. treasurer, Mr. P. F. Bunyard, gave a lecture on "Nesting Boxes on the Baron Berleph System," or "How to Attract and Protect Wild Birds." The system which he promulgated is now used in Germany with good effects, and Baron Berleph, the author of this system, has for some years scientifically catered for the birds' requirements in the whole of his estate of some 2,000 acres. The result of his experiments has been to attract insectivorous birds only, and these in return have preyed upon insect life in their surroundings that his trees are growing in sound, healthy condition.

ENQUIRIES AND REPLIES.

HOCKBERRY.—Can any reader kindly tell me what species of plant is known as the Hockberry? J. W. E.

THE POISONOUS PROPERTIES OF THUYA (see p. 371).—For many years I supplied from the Pen-carrow grounds bundles of Evergreens to the Wadebridge Foresters' Fête Committee for the purpose of decorating the town on the occasion of their annual sports. Four or five years ago, a racing donkey was taken suddenly ill soon after winning a race. As it was a valuable animal, its owner immediately sent for a veterinary surgeon, who diagnosed poisoning, and administered an emetic, which brought to light pieces of *Thuya gigantea*. The donkey soon afterwards completely recovered, but the veterinary surgeon was strongly of the opinion that it would have died had the *Thuya* been allowed to remain in the stomach. A. C. Bartlett, Bookham Grove Gardens.



Editors and Publisher.—Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the *Publisher*; and that all communications intended for publication, or referring to the Literary department, and all plants to be named, should be directed to the *Editors*. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

AGAPANTHUS: Omega. *Agapanthus umbellatus* is a somewhat greedy plant, and we suspect that your specimen, through being confined for a long period in the same pot, has become too weak to flower. This is the more likely, because the species is one of the most free-flowering when it is treated liberally at the roots and given full exposure to sunshine during the summer months of the year, either out-of-doors or in a very freely-ventilated conservatory. Your best plan would be to give the plant a shift either by removing it to a larger receptacle or by dividing it into two specimens. It may not be convenient to repot such a plant frequently; therefore, it is desirable to make the compost as lasting in good qualities as possible. One of the most floriferous plants we remember to have seen was a very large specimen in a wooden tub, which measured about 2 feet square and 2 to 2½ feet deep. This plant was potted in good loam with a quantity of sand mixed with it, but in addition to these materials such a quantity of quarter-inch bones was added as to make the compost appear white, and a little chemical manure was mixed in. This was done more as an experiment than anything else, as the quantity of bones seemed excessive. But it was successful, for the plant continued to grow and to flower most satisfactorily for years afterwards without any further stimulant. During the growing season the specimen was soaked frequently and thoroughly with clear water, but in December and January the roots were reduced to a condition of dryness approaching drought.

ARAUCARIA IMBRICATA: T. W. The male and female inflorescences are usually borne on different trees, but not always. The well-known case of a tree at Bickton, in Devonshire, which bore cones of both kinds, may be cited. From the seeds developed by this tree many young trees were obtained. See Veitch's *Manual of the Coniferae*, p. 188.

ERICA CUTTINGS: W. E. If the cuttings are not overcrowded in the pots, they may be allowed to remain until early in the new year. If more convenient, they may be potted as soon as they are well rooted, for when they are left for too long a period in cutting pots the roots get matted together, and it becomes difficult to divide them. If done at this season, three or four rooted cuttings may be put into each pot, potting them singly early in the spring. It is usual to stop the leading shoot once, and allow

the plants to make a new start before disturbing them. When first potted they may be kept rather close, and given a little warmth, but after they are established, the hot-water system should only be employed to keep out frost, and fresh air should be admitted on all favourable occasions. Watering must be carefully attended to, especially if the plants are placed on a stage with hot-water pipes beneath it; for the soil in the pots will be liable to get dry beneath whilst the top appears moist. If the plants are allowed plenty of light and air, growth may be encouraged by keeping the house extra warm, but in dull, dark weather the cooler the house is kept the better. For potting soil, use clean, fibrous peat, with a liberal addition of sand. The compost should be pressed down firmly, taking care that it is equally firm beneath as on the surface. To prevent mildew making its appearance, a little sulphur may be dusted about the plants. *E. hyemalis* is most susceptible to mildew, which proves very destructive if not checked on its first appearance. When potting into large pots, a little soot may be added to the compost, and if the peat is very light the addition of some light fibrous loam will be beneficial. After *Ericas* are well established, they should have plenty of room, so that the light and air may circulate about them. During the summer months they should be placed in the open, fully exposed to the sun. To form bushy plants they may require stopping once after they have made a good start, but this must not be done later than April, or the flower-stems will be short. After the plants are well rooted, soot-water may be used, but it should be made some time before it is required, so that it can be given in a clear state. When the blooms are setting, stimulants should be withheld, but feeding may be continued again when the plants are coming into flower.

HYBRIDISING CHRYSANTHEMUMS: A. H. You do not state which types of *Chrysanthemums* you wish to cross. In the case of singles, which are the easiest to raise from seeds, it is not necessary to remove any part of the flower, but with early-flowering and Japanese varieties, it will facilitate matters if you cut back the florets. In the case of large-flowered varieties, it will be found that the florets each possess ovary, style and stigma, but do not bear pollen, whereas the central florets have, as a rule, the stigmas covered with pollen. It does not follow, however, that any given variety produces both potent pistil and stamen, for in many cases the stamens, though present, are bare of pollen. In cases of this sort, the varieties seed very badly, and sometimes not at all, appearing to be more or less sterile. Varieties which seed easily, usually produce a large quantity of pollen. In common with some other flowers, the stigmas are, as a rule, unexpanded until the pollen has been shed, and comparatively few *Chrysanthemums* are self-fertilised.

IRON IN THE SOIL: C. R. Your soil is evidently suffering from an excess of oxide of iron, which is very injurious to plants when present in large quantities. The best method of counteracting the evil is to apply about one ton of quicklime per acre during the winter, dig in, and leave the soil rough until the spring. In the case of hard water to be used for plants, keep a supply in a large tank, to which add quicklime and soot, half and half; the quantity to be used will depend upon the size of tank. When the water is very slightly alkaline to the taste, enough lime has been added. Give an occasional stir with a stick, allow the solid matters to settle, and water the plants with the clear liquid.

MILDEW ON GRAPES: Nil Desperandum. One of the most common causes of mildew on Grapes is a badly-drained Vine border. Excessive dryness is also a fertile source of this pest. Examine the border, and should there be evidence of stagnation lift the whole of the roots inside the house and replant them in a new border. Should the subsoil be unsuitable for Vines, place a thin layer of concrete over it to keep the roots from going down, and over the concrete provide thorough drainage. Mildew usually makes its appearance soon after the berries have set; at that stage a little sulphur should be dusted over the foliage once a week, and occasionally a little may be dusted on the hot-water pipes. Now the Vines are dormant they

may be fumigated by burning sulphur in the house on a still night. Scrub the rods with a strong mixture of soft soap and sulphur.

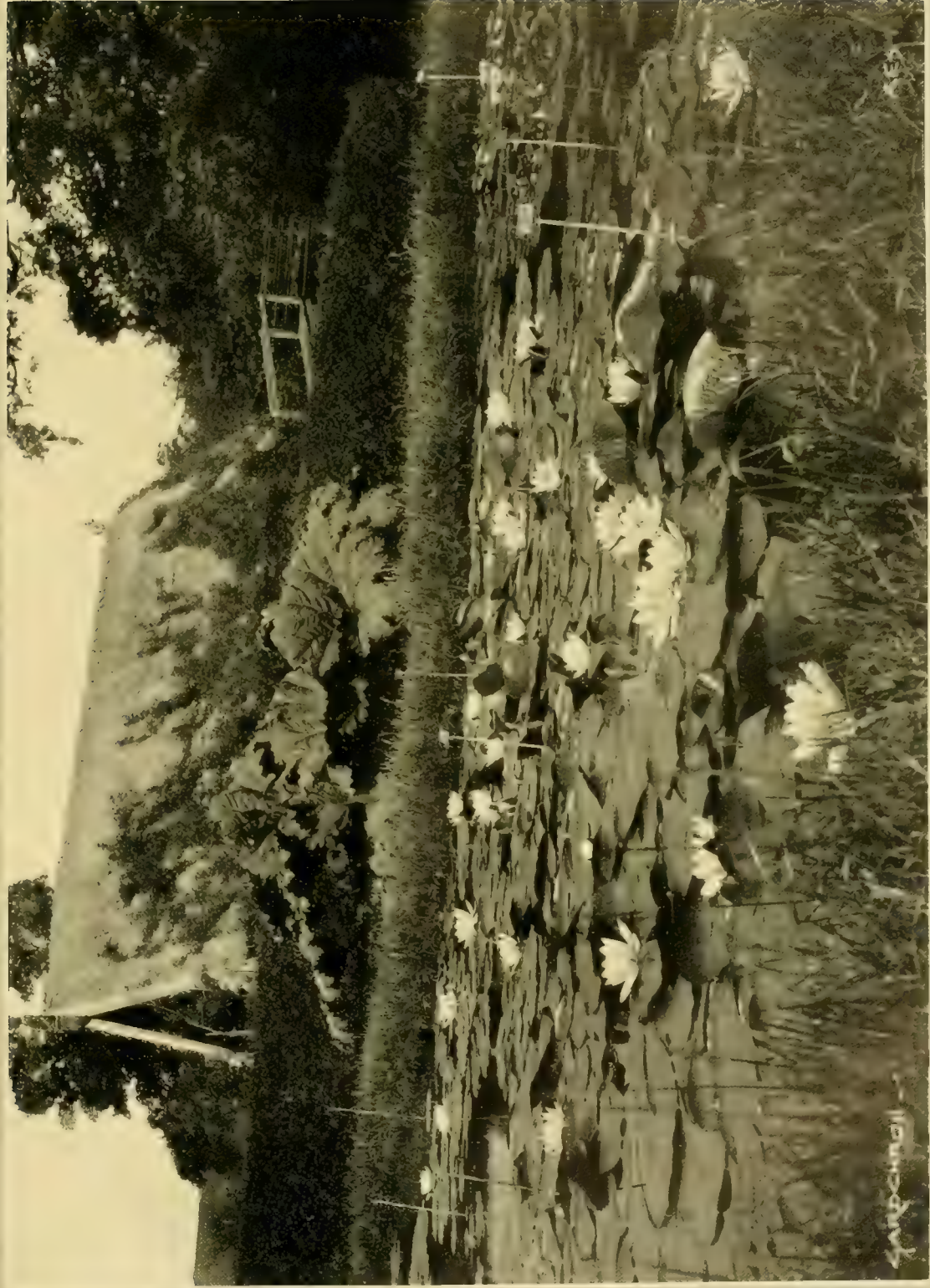
NAMES OF FRUITS: G. B. Belle Pontoise.—C. H. Reinette Franche.—Velein. Soldat Laboureur.—Parslow. The Apple is of very nice appearance; but, compared with other varieties in season, it is of poor quality.—W. D. & S. Présent de Van Mons.—J. D. C. 1, Scarlet Golden Pippin; 2, Newtown Spitzenberg; 3, Brabant Bellefleur; 4, Lord Burghley; 5, Leathercoat; 6, not recognised.

NAME OF PLANTS: G. P. "Cape." *Ornithogalum lacteum*.—M. M. 1, *Cochlodora sanguinea*; 2, *Liparis longipes*; 3, *Bulbophyllum pavimentatum*.—G. H. *Abelia rupestris*.—O. R. 1, *Cheilanthes lendigera*; 2, *Pteris quadriaurita*; 3, *Adiantum formosum*; 4, *Blechnum occidentale*.—R. P. 1, *Cypripedium Leeanaum*; 2, *Lælio Cattleya Blechleyensis*; 3, *Selaginella Willdenovii*; 4, *Acalypha macrophylla*.—Cheaton. *Ruscus racemosus*.—A. C. *Jasminum grandiflorum*, native of North-western Himalaya.

POISONOUS CREEPER: G. H. B. *Sidcup*. The plant sent is the Poison Ivy (*Rhus Toxicodendron*), and it is the cause of the eczematous eruptions. This tree should never be pruned without gloves, as very serious skin troubles are otherwise started. The remedy for the poisoning is sugar of lead dissolved in alcohol. The only other subject in your list not above suspicion is *Clematis Flammula*. The say of this also causes skin trouble, but usually only when the skin is broken. The following information respecting *Rhus Toxicodendron* is reproduced from the *Kew Bulletin*:—" *Rhus Toxicodendron* (which is now taken to include also the *R. radicans* of Linnaeus) is widely spread over the eastern portions of North America, and is found in certain parts on the western side. It occurs also in Japan. Sometimes it takes the form of a loose, wide-spreading shrub; sometimes it is a climber. Not only is it variable in mode of growth, but also it exhibits a great diversity in the size and shape of its leaves. Although these are said to be occasionally quinquefoliate, they are almost always trifoliate. The three leaflets of a particular leaf are sometimes similar in size and shape, but usually the middle one is larger than the other two, and it has, invariably, a longer stalk. The margins are either entire or coarsely toothed, the coarse toothed being apparently more characteristic of young plants. In the autumn tints of its foliage this shrub is one of the most handsome we possess, dying off as it does into various rich shades of red. Some years ago the climbing form was distributed from a nursery as *Ampelopsis Hoggii*, a name which has, of course, no justification, but which was no doubt suggested by its similarity in leaf and colouring to *Ampelopsis Veitchii*. This is an instance in which the propensity of some plant dealers to give new names to old plants without troubling to have their identity established has been attended by a certain danger to the public, in addition to the inconvenience and confusion this practice always entails.

TOMATOS: Inquisitive. Four tons of horse manure will be none too much for a house measuring 220 feet by 29 feet. The manure will be better if it is fairly decomposed and dry. Do not dig in artificial manures of any kind, as these can be better applied to the plants when they have set two or three trusses of fruit, but burnt garden refuse or wood-ashes might be mixed with your heavy soil with advantage. The essential point is to provide a rooting medium which will encourage free root action without causing the plants to grow excessively strong. From 12 to 15 bushels of air slaked lime will be sufficient for each house.

Communications Received. R. Wood—R. de B. (your communication has been forwarded).—A. P. W. Coomber—A. J. W. (thanks for 2s. 6d. contributed to Orphan Fund).—T. H. R.—C. T. D.—E. M. F. M.—W. H. Y.—A. W. P.—W. J. D.—S. A.—J. G.—T. S. Chiddingfold—F. C. L. Surrey Observer—R. W. T.—R. P. M. B.—Java—J. O. B.—H. C. Genova—J. R. Middlesex—H. S. T.—W. Kent—W. E. Sussex—F. C. H.—W. J. J.—R. W. Aberystwyth—C. J. W. A. G. Somerset—L. H. Shrewsbury—J. P. Messrs. R. & Co.—J. W. F. S.—H. P. C.—J. T. S.—C. F. K.—H. A. B.—D. K. P. B.—D. I.—Messrs. W. J. W., Ltd.—J. I. Hayes—W. I.—A. J. H.—G. H. H.—J. R.—Messrs. J. B. & Son.



Photograph by the Earl of Onslow.

WATER-LILIES IN THE EARL OF ONSLOW'S GARDEN AT CLENDON PARK, SURREY.



THE

Gardeners' Chronicle

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CLASSIFICATION OF DAFFODILS.*

THIS publication, issued under the authority of the Royal Horticultural Society, contains more than the title implies. It is, in fact, a readjustment, for horticultural purposes, of previous classifications of the genus *Narcissus*, with a full classified list of all species and garden varieties which have been named up to date. It will be noticed in the title and general letterpress that the term "daffodil" is used for all forms of the genus regarded as garden flowers. It is certainly as convenient as it has now become popular to drop the older distinction between trumpet "daffodils" and the shorter-crowned "Narcissi," and henceforth it will be unnecessary to speak of daffodils and Narcissi.

There is a legend that Haworth, who made a close study of the genus, and in 1831 contributed his *Narcissus* monograph to Sweet's *Flower Garden*, lost his reason in the attempt to systematize the daffodils and daffodil-names existing in his time. Recent proposals

and experiments in the direction of rearrangement for modern needs have produced, if not such dire results, at least sharp criticism and dissension, to which it is hoped the present publication will give pause. So many minds are bent upon the characteristics of this extraordinarily and deservedly popular flower that there must be differences of opinion as to its grouping in the garden and the showroom. But an appeal is here made to sink such differences, at all events until the present scheme has been fairly tried. It is not put forward as necessarily final, but as open to modification when, from time to time, the necessity may arise, in view of the unceasing production of new interbred forms. The scheme is the outcome of a second endeavour, within two years, by a special *ad hoc* sub-committee of the *Narcissus* Committee of the Royal Horticultural Society, and the present writer can testify to the extreme pains taken and the careful consideration given to all alternative schemes and suggestions communicated to the sub-committee.

Broadly speaking, the several classifications used or proposed hitherto have been natural, artificial, or a mean between these two. A natural classification arranges its groups according to the botanical structure or obvious characteristics of the entire plant. Thus it would not put cyclamineus into the same division with trumpet daffodils, although both may show the same relative dimensions of perianth and corona. Nor would it associate *Jonquilla* with *triandrus*, although both carry several flowers on one stem. An artificial system founds its divisions arbitrarily, e.g., on the relative measurements of perianth and corona, without reference to botanical affinities. To find permanent acceptance, a system must probably be a compromise between the two. Length or shortness of crown as compared with the perianth segments will always be a main criterion of grouping on the show-stage. But, at the same time, the man with a true instinct for the individuality of a plant will resent the "lumping together," say, of trumpet *maximus* and *Bulbocodium*, of *Tazetta* and *triandrus*, or of pure *poeticus* with its hybrids. For this reason the tentative arrangement drawn up very ably on such quite arbitrary lines of division by the Royal Horticultural Society in 1908, failed to secure favour. Undoubtedly the classification and the arrangement of the then extant daffodils, made by Mr. J. G. Baker in 1869, and subsequently modified by Messrs. Barr and Burbridge, were an admirable compromise, and the main outlines will continue to serve the grower and the exhibitor. The present classification is practically the same, and its differences are chiefly in the direction of simplification. At first thought, it may seem strange that classification should proceed from complex to simple, considering the vast and intricate output of seedling forms. But reflection will show that convenience will always tend to simplification. To take the instance of the Rose, nothing can be more complicated than the interbreeding which, from original forms, has given us the roses of our gardens of to-day. If fanciers had recorded the original elements and the intercrossing of the Rose as they have of the Daffodil, no doubt their classification would at one time have been highly intricate. But now a very few groups, with some popular

name for each variety, suffice for the whole multitude in the Rose garden or Rose show. A long step in simplification was taken when, in 1884, it was decreed by the Royal Horticultural Society "that garden varieties of *Narcissi*. . . should be named or numbered in the manner adopted by florists, and not in the manner adopted by botanists." Consequently, in Messrs. Barr's catalogue which has always served as a standard, since they have taken far more than a trade interest in the Daffodil—" *Narcissus incomparabilis sulphureus marginatus minor* " became plain "Queen Mab." And the classification has dropped rather than increased its divisions; for example, the sub-classes *Humei* and *Vinceti* have been struck out as superfluous. The classification here reviewed has aimed at the utmost possible simplicity, i.e., at creating no more classes than enough to contain all well-known daffodils. Two, indeed, out of its eleven divisions are a provision for future rather than for present requirements. Division VI., for cyclamineus hybrids, may perhaps hardly be filled in the near future, for the flowers are so early as rarely to appear at the April shows. But cyclamineus crosses so readily with other forms that it is sure to yield a large variety. Under Division VII., for *Jonquilla* hybrids, few examples are as yet in commerce, but many are in the hands of raisers, and the "break" is beautiful, and likely to prove of high trade value. *Triandrus* hybrids (Division V.) are already a considerable and increasingly admired class. In particular, the hardiness and loveliness in texture and colour of the *Leedsii-triandrus* seedlings demand their recognition in any adequate scheme. Full consideration was given to every recommendation to make more classes, but it was evident that no exhibition schedule or stage could embrace, without hopeless complexity, the classes which might plausibly be made of interbred forms. For this reason, the sub-committee braved the charge of inconsistency in retaining colour alone, without reference to form, as the criterion of Division IV., *Leedsii*. It seemed better to have various white, short-crowned daffodils shown in one and the same class than to separate them into classes according to length of crown. At the same time the distinctness in natural character of *Leedsii* forbade its being classed as white *incomparabilis*. The sub-divisions according to colour, three in Division I., two in each of Divisions II. and III., are certainly an irreducible minimum, but it was thought they would cover the ground. There has been some little controversy as to the retention of *poeticus* as a class apart from its small-cupped hybrids which approach it so closely. It was, however, the opinion of the most experienced raisers and growers that pure *poeticus* has still an unmistakable character which isolates it, and therefore, after full deliberation, it was kept separate. It is to be remembered that the classification has been drawn up chiefly for the exigencies of the Daffodil show, a point of view which explains such an arrangement as the relegation of the smaller species such as cyclamineus *triandrus* and *Jonquilla* to Division XI. (various), since they are not likely to find a place on the exhibition stage with their larger blood-relatives.

The writer would urge upon critics of this classification that no scheme can faultlessly cover the whole of its intricate material—

* Classified List of Daffodil Names. (Royal Horticultural Soc. ety). Price 1s.

certainly not for the future as well as for the present; but that a very simple scheme, capable of expansion and addition, is preferable to premature and cumbrous attempts to classify minutely every one of all our myriad actual or potential daffodils. *G. H. E.*

DETAILS OF THE NEW CLASSIFICATION OF DAFFODILS.

The 11 Divisions are as follow:—

Division I.—TRUMPET DAFFODILS.

Distinguishing character: Trumpet or crown as long as or longer than the perianth segments.

- (a) Varieties with yellow or lemon-coloured trumpets, and perianth of same shade or lighter (but not white).
- (b) Varieties with white trumpet and perianth.
- (c) Bi-color varieties, i.e., those having a white or whitish perianth and a yellow, lemon, or primrose trumpet.

Division II.—INCOMPARABILIS.

Distinguishing character: Cup or crown not less than one-third but less than equal to the length of the perianth segments.

- (a) Yellow shades with or without red colouring on the cup.
- (b) Bi-color varieties with white or whitish perianth, and self-yellow, red-stained, or red cup.

Division III.—BARRII (INCORPORATING BURBIDGEI).

Distinguishing character: Cup or crown less than one-third the length of the perianth segments.

- (a) Yellow shades, with or without red colouring on the cup.
- (b) Bi-color varieties with white or whitish perianth, and self-yellow, red-stained, or red cup.

Division IV.—LEEDSII.

Distinguishing character: Perianth white, and cup or crown white, cream or pale citron, sometimes tinged with pink or apricot; embracing all dimensions as found in the Incomparabilis and Barrii groups (Divisions II. and III.).

Division V.—TRIANDRUS HYBRIDS.

All varieties obviously containing *N. triandrus* blood, such as *Queen of Spain*, *Earl Grey*, *Eleanor Berkeley*, *Moonstone*, *Agnes Harvey*, &c.

Division VI.—CYCLAMINEUS HYBRIDS.

Division VII.—JONQUILLA HYBRIDS.

All varieties of *N. Jonquilla* parentage, such as *Buttercup*, *odorus*, &c.

Division VIII.—TAZETTA AND TAZETTA HYBRIDS.

To include *N. Tridymus*, *Poetaz* varieties, the Dutch varieties of *Polyanthus Narcissus*, *N. biflorus*, *N. Muzart*, and *N. intermedius*.

Division IX.—POETICUS VARIETIES.

Division X.—DOUBLE VARIETIES.

Division XI.—VARIOUS.

To include *N. Bulbocodium*, *N. cyclamineus*, *N. triandrus*, *N. juncifolius*, *N. gracilis*, *N. Jonquilla*, *N. Tazetta* (sp.), *N. viridiflorus*, &c.

CYPRIPEDIUM REGINALD YOUNG:

(*C. HITCHINSÆ* [ELMIREANUM] × *C. INSIGNE* HAREFIELD HALL.)

AN Award of Merit was accorded this showy hybrid when exhibited by its owner, H. J. Bromilow, Esq., Rann Lea, Rainhill, Lancashire (gr. Mr. Morgan), at the Royal Horticultural Society's meeting on October 25 last. Reference to the illustration will show that it is a fine, bold flower, with the markings attractively displayed, the large chocolate-purple blotches on the dorsal sepal (which has an Indian yellow base and pure white upper part) being even more pronounced than might have been expected from the parents used. The petals and lip are honey-yellow tinged and slightly veined with pale purple. Specialists in *Cypripediums* always appreciate good new varieties, and the one here illustrated is well worthy of their attention.

NOTES FROM A "FRENCH" GARDEN.

THE USE OF CLOCHES.

THE cloches or "bell glasses," indispensable as they are in a French garden, are supplementary to the frames and lights. They encourage plants to make a sturdy and healthy growth in winter, partly because their peculiar shape prevents excessive dampness, which is so prejudicial to seedling plants at this time of the year. Plants grown under cloches in the spring are very strong, but as the sun gets warmer the growth becomes spindly and soft; the plants require shade and more ample ventilation. For the latter reasons, the cloches are almost disregarded in the summer months, their use being confined to 10 months of the year. They are used for the following purposes: (1) For the rearing of the Cabbage and Cos Lettuces, and (2) for the growing of Cabbage and Cos Lettuces as market crops from February till May 3. (3) For the temporary shelter of plants set in their final quarter at a precarious stage of growth, such as Cauli-

flower exercises his judgment in using the mats, and only covers the cloches at night when it appears to be absolutely necessary; exception is made, however, with new cloches; they should be covered more often, as the new glass is apt to break during frost.

From January 15, the hot-beds for the frames and lights are started, and the "Little Gott" Lettuces are transferred from the cloches to their final quarters in the frames. At the end of that month, the frames for cold work are also planted with either "Little Gott" or "White Passion" Lettuce; the former variety is preferable. In a well-organized garden, this work is finished by February 10, and about 400 cloches are at liberty. At that date, the hot-beds for forcing Cos Lettuces under cloches are begun, utilising for that purpose the 400 cloches from the "Little Gott" Lettuces. When the fermentation of the manure commences, two or three "Little Gott" Lettuces and one Cos Lettuce, "Paris Grey," are set under each cloche, and within seven or eight days the spaces between the three rows of cloches on



FIG. 166.—CYPRIPEDIUM "REGINALD YOUNG": A HYBRID WITH FINELY-MARKED DORSAL SEPAL.

(Received R.H.S. Award of Merit, October 25.)

flowers in the spring. Tomatos early in May and ridge Cucumbers in June. (4) For the first stage of growth of Melons or Telegraph Cucumbers on hot-beds until frames and lights from the earlier batch of Melons are available in July. It is necessary to explain how this system is put into practice, for example, in a garden containing 1,000 cloches and 250 lights. Early in October the ground has first been dug and then top-dressed with 2 or 3 inches of well-decayed manure. Five hundred cloches are planted with 15,000 Lettuces of the variety Little Black Gott, and 300 cloches are set with 4,200 "Paris Grey" Cos Lettuces. At the second transplanting, in November, the "White Parisian" Cos Lettuce is transferred to the frames, where it remains till late in March. Two hundred cloches are planted with 6,000 "White Passion" Lettuces. They are planted in the above order. The plants remain there throughout the winter, the only care they require being ventilation in mild weather and protective covering in case of frost. The

each bed are planted with another "Paris Grey" Cos Lettuce, as shown in the diagram published in the *Gardeners' Chronicle*, March 13, 1909, fig. 70. As the work proceeds, all the cloches are brought into use by the end of the month, excepting those under which the "White Passion" Lettuces are grown. It is then time to plant this variety in the open ground, putting the plants 10 inches apart each way, and the remainder are used either for some hot-beds, or, as is often the case, for cold work. When they are employed for the latter purpose, the ground is prepared previously, and Radishes are sown broadcast before placing the cloches three rows for every bed. Three "White Passion" Lettuces, with one Cauliflower, are set in each cloche on the outside rows; in the middle row one Cos Lettuce is planted instead of a Cauliflower. By this method the cloches are brought again into use, and will supply a succession of Lettuces from March 20 until the middle of June. From early in May the Cos Lettuces under cloches will do better if the

latter are removed, as the sun is too strong. The cloches are then used for sheltering Tomatos planted in the open ground, which have been previously grown in frames or a greenhouse. The cloches are shaded with limewash. As the plants get established, they receive proper ventilation, and the first truss of blooms is very often set when the cloches are removed three or four weeks later. In some gardens, they are used for sheltering Vegetable Marrows during May, and it is a common occurrence to obtain in that manner Marrows of a marketable size in the middle of June. By June 10, the cloches are removed to ridge Cucumbers, where they remain until early in July. When ridge Cucumbers are not grown, hot-beds are made early in June, as for frames, and they are planted either with Melons or Telegraph Cucumbers, with the cloches as covers. The space under the cloches is quite sufficient for their growth till the middle of July, when they are replaced by the frames and lights which are then at liberty; these latter increase the head-room necessary to the growth of the plants. Then the cloches are washed and stacked until the end of August, when about 150 are used for growing Lettuces for marketing in November, at which time they will be needed for the second transplanting of the Cos Lettuces.

To carry out these arrangements satisfactorily, it is necessary to know the space required for each crop, and to have the ground in proper condition, so that no time is wasted. The average breakage of cloches in a well-conducted garden rarely exceeds 2 per cent. each year. *P. Aquatias.*

ALPINE VALLEYS.

(Continued from page 386.)

THE ROJA.

It is a tiresome paradox that, though only a few miles, as the enviable crow flies, intervene between the Valley of the Vésubie and that of the Roja, that is to say, between St. Martin Vésubie and St. Dalmas de Tende, yet so high and tumultuous are the mountain ranges that occupy those few miles that, to get from one place to another, one must needs, from St. Martin, go down all the way to Nice, and thence all the way along the coast to Ventimiglia, and thence again all the way up the Valley of the Roja to St. Dalmas. Three sides of a square, that is, instead of one. The Valley of the Roja, ascending from the sea, is dull. It rises very, very slowly; the moment you think you are really beginning to mount a little, the road drops again down a declivity, the reason of all this being that, although one is making for one of the greatest of Alpine passes, the Col de Tende rises abruptly from very low levels to a very great height. The Roja River flows in what seems to be an almost flat bed. Night descended upon us long before we had reached St. Dalmas (which, as we are now in Italy, must henceforth be called San Dalmazzo de Tenda), and nothing of interest had I seen on the way, except one plant of *Saxifraga cochlearis*, which is the special proprietor of the Roja Valley, even as *S. lantoscana* possesses that of the Vésubie.

San Dalmazzo, even more accessible than St. Martin, is no less delightful. It lies not far from the foot of the pass, at some 2,000 feet, at a point where the little Briga Valley comes down into the main valley of the Roja, thus bringing a cool breeze even in the height of hot summer. Chestnuts grow thick round San Dalmazzo, and even in winter, with snow on the ground, the place is as warm and delicious as it is deliciously cool in summer. *Cephalanthera rubra* is the first rarity one finds, growing along the rills in the Chestnut groves; and, on the one side, rise cliffs of limestone, and, on the other, cliffs of granite, offering promise of a double flora.

On the limestone, in places which I will not further precisify, grows in the most glorious

abundance *Primula Allionii*. This eccentric plant inhabits for choice (though I have found it also thriving on the open cliffs) little pecked caves and shallow grottoes in the rock-face. From their roofs and walls it hangs in enormous, aged masses—the growth of centuries—in such places as can never be reached either by sun or rain. The *Primula*, thus armed against any sort of superficial moisture, has developed so intense a viscosness of foliage that if dust or dirt falls on its leaves, not all the licking and flicking in the world can get them clean again. It grows perpetually on from one rosette; a mass some feet across is sometimes formed—each rosette—on a long stalk, still clothed with the dead, sticky leaves of innumerable seasons. When I saw this precious plant, the flowering time was over, and not a blossom was to be seen. However, my collected pieces—though the plant travels ill (owing to the fact that its stickiness causes it to ferment)—all took hold and began to flower within three months of their arrival in England. Even on the Cliff it has taken firm hold, and emits several of its lovely blossoms. Above San

However, lest I should do the lesser Columbine injustice, I was allowed at last to see it in character. For it was our fate to ascend the Miniera Valley. It is granitic, long, and steep, and very, very dull and hot. *Lilium bulbiferum* abounded, *Sempervivum arachnoideum* in its transalpine form was white as wool on the black rocks, and *Geranium macrorrhizum* grew among stone slopes here and there. But altogether we hated the Miniera Valley, in our setting forth, in our arrival at our goal, and in our return. The one bright spot was a bank all blue with *Aquilegia Reuteri*, and *Campanula stenocodon* growing a little lower down at the edge of the path. And Reuter's Columbine is really very lovely—half the size of *A. alpina*, it is true, but of an even clearer and intenser colour. At twilight, among the coarse grasses on that stony slope, it seemed to glow like a pure blue fire. It was very abundant at this one point, brilliant and beautiful, very different from the feeble, fading specimens I had seen under the *Primula's* cliff. And I also saw a double form—*monstrum horrendum*—a calamity that I have never observed before



FIG. 167.—VIEW IN THE DELL, EAST BURNHAM PARK.

(See p. 408.)

Dalmazzo though, it begins to flower, I believe, in December, and may be seen in glory from any moment thenceforward until the end of May.

Those same cliffs give also *Potentilla Saxifraga* and *Moerhingia sedoides*, besides here and there a mass of *Saxifraga cochlearis*. At their feet, are to be seen *Aquilegia Reuteri* and *Lilium pomponium* (I only saw one plant of this, which is entirely out of its place here), together with *Linum viscosum*, tall and pink and splendid, with its great cups which, in one form, had varied to a lavender-lilac. The Columbine is, to all intents and purposes, a much-diminished version of *A. alpina*. I had expected to find it in these parts, yet the discovery took me by surprise. I had been promising my companion much emotion from his first sight of *A. alpina*, and, when we came upon *A. Reuteri*, I felt, with a shock of apology, that the Alpine Columbine must have sadly grown in my imagination, or sadly shrunk in reality. But, after a moment of disillusionment, I steadied myself, realising that this poor, puny thing could not be *A. alpina* at all, but *A. Reuteri*.

among the wild Alpine Columbines. The *Campanula* is a rare plant of high stone banks and moraines. It is even rarer in cultivation, though I believe it to be as amenable as it is interesting and lovely. In habit, it is almost rotundifoliate, thin and wiry, with very narrow leaves. The flowers, carried as in the rotundifolia section, are of a very rich dark violet-blue. Their characteristic is their shape, which is that of a long, narrow trumpet, entirely different from that of any other *Campanula* one grows.

I draw a veil over the Miniera Valley. At its welcome end it becomes the Valmasco Valley, with a view up to the magnificent crags and cliffs of the Rocca del Abisso. Its boulders are clothed with *Primula marginata*, and its upper woods are gorgeous with *Aquilegia alpina* (we saw a big sheaf of this in a bowl, and the sight made one hate oneself for having thought that *A. Reuteri* could even be a form of it), and *Fritillaria Moggridgei*, the yellow variant of *F. delphinensis* with which, we were told, it here grows indiscriminately. On one side of the glen, rise limestone cliffs which were given us as

a station for *Saxifraga diapiensioides*. *Viola Nummularifolia* is said to abound in the higher primary screes, together with *Campanula Allionii*, which here occurs, though rarely, in a form about twice the size and twice the purpleness of the ordinary *Allionii*. And, finally, the Valmasco Valley and the cliffs of the Rocca mark the extreme Easterly limit of *Saxifraga florulenta*.
Reginald Farrer.

EAST BURNHAM PARK.

(See figs. 167, 168, 169, 171, and Supplementary Illustration.)

MR. HARRY J. VEITCH'S estate of some 88 acres in extent, situated within a few minutes' walk of the famous Burnham Beeches, in Buckinghamshire, was purchased by the present owner in 1892. The garden attached to the house is one of the most beautiful, varied, and scientifically-formed gardens of our time, and one in which a very large number of recently-introduced trees and shrubs form objects of great interest to those engaged in out-door gardening. The older portion of the residence, the part covered with the *Wistaria* in bloom, seen in the supplementary illustration, was built by Grote, the distinguished author of the *History of Greece* (1850); from this fact Grote named his house "History Hut." The place was sold in 1857, and the new owner made considerable additions to the house, and also built commodious stabling. The principal addition made by Mr. Veitch is a large billiard-room, the walls of which are hung with many beautiful pictures. But, with all these modern improvements, the building bears evidence of age in the climbers which clothe parts of its walls, and the trees and shrubs which surround it. On the house, for example, is a fine specimen of *Magnolia grandiflora*, with its large, shining, green leaves and fragrant, white flowers, the shoots reaching to the top of the building. The *Flame Nasturtium* (*Tropæolum speciosum*), planted on either side of the entrance, rambles over the adjacent shrubs, displaying its brilliant flowers in a manner possible only with long-established specimens. The view across the grounds from this spot takes in a gigantic Cedar of Lebanon, the trunk of which is more than 17 feet in circumference at 5 feet from the ground. The tree is over 90 feet in height, and, although age and storm have left their marks on the branches, especially on one side, the tree is still very handsome.

The grounds contain large Limes and Chestnuts, and clumps of stately Pines. *Cedrus atlantica glauca*, with its delicate blue tint, and *Cedrus atlantica aurea*, with foliage of a clear, light-yellow hue, are effective at several points; other rare Conifers seem to thrive in the sheltered, warm situations in which they are planted. *Magnolias* form fine bushes that flower well in these grounds; two that were finely in flower the past summer were *M. parviflora* and *M. Watsonii*. Other plants that were especially beautiful include *Fremontia californica*, with its clusters of yellow flowers; *Quercus pannonica*, with large, ornamental leaves; *Populus lasiocarpa*, the massive green foliage having crimson veining; ornamental species of *Vitis*, trained to tree-stumps and over arches; and many newly-introduced Chinese shrubs of uncommon beauty and interest. A fine stretch of green lawn exists on the garden side of the house, and beyond it are beds of flowering shrubs, planted in rings or masses, the several kinds in each bed flowering in succession throughout the year. The edgings only of these shrubberies are planted annually with flowering subjects, for summer bedding is not practised, or only to a very limited extent. Beds of *Rhododendrons* furnish a display of flowers in their season, the principal varieties being *Purity*, *Fred Waterer*, *Amphion*, *Kate Waterer*, *Marchioness of Lansdowne*, and *Pink Pearl*. *Azaleas* are arranged in beds also, and these not only give colour in the flowering season, but their brightly-tinted foliage is beautiful in autumn. *Roses* are extensively planted

in several parts of the garden, the central beds of Catherine Testout, Frau Karl Druschki, Mrs. John Laing, Hugh Dickson, Marie van Houtte, Paul's Scarlet, Victor Hugo, and other showy varieties being bounded by pillars and arches of Climbing Captain Christy, Queen Alexandra, Paul's Carmine Pillar, Electra, Wedding Bells, a selection of hybrid *Wichuraianas*, Dorothy Perkins, and others. The white sport of Dorothy Perkins appeared in these gardens, and this year it has sported again, producing flowers of a deep crimson, darker even than Crimson Rambler.

The value of planting in masses for effect is well exemplified in these fine gardens (see fig. 167), where even ordinary subjects give remarkably fine effects, especially from a distance. For example, *Spiræa Lindleyana* is beautiful in its fresh, green, Fern-like foliage, and its plume-like sprays of flowers; *Bocconia cordata* provides foliage of a very uncommon tint; masses of alternately-arranged yellow and white-leaved *Acer Negundo*; and purple *Prunus Pissardii*. Most of these permanent beds are edged with spring-flowering

and trailing species, which beautify the pathway with their sprays of flowers. One of the most effective is the common *Lysimachia nummularia* (Creeping Jenny), a common British plant, which sends forth a profusion of its slender sprays with yellow flowers. Alpine Pinks, *Saxifrages*, *Gentians*, and a large number of other rock plants make a fine show in the rock-garden, whilst in moist dells, *Iris Kämpferi* and other species of *Iris*, massive *Gunneras*, *Senecio clivorum* and other large *Senecios*, and *Rheums* form beautiful objects. On and near the rockeries specially attractive plants were *Cotoneaster congesta* and *C. humifusa*; *Pinus sylvestris globosa*; a dwarf set of the pretty Japanese Maples; *Lonicera Maackii*; the curious miniature Holly, *Ilex Perneyi*; *Berberis Wilsonæ*; and a specimen of *Davidia involu-crata*, which it is hoped will soon reach the flowering stage. In a moist dell, with stepping-stones over the running water, are *Saxifraga peltata*, *Onoclea sensibilis*, *Struthiopteris germanica*, *Osmundas*, and *Astilbe palmata*; whilst on the banks was observed a very interesting col-



FIG. 168.—WATER GARDEN IN THE GROUNDS OF EAST BURNHAM PARK.

bulbs, amongst which *Dianthus*es, *Asters*, and other summer flowers are planted after the bulbs have passed out of bloom. In every available space, both on the greensward and beside the walks in the woodland glades bordering the gardens, innumerable spring-flowering bulbs are planted. *Iris reticulata* is one of the first plants to bloom.

Passing from the gardens surrounding the house, by the water gardens (see fig. 168), which, in summer-time, are beautiful with coloured *Nymphæas*, the banks being bright with the flowers of *Irises* and various bog plants, the visitor reaches the pergola (see fig. 169). The upright supports of roughly-cemented brick have been adopted to avoid the collapse inevitable when wooden uprights are used. The pergola is covered with *Roses*, *Honeysuckles*, *Jasmines*, and other flowers that trail amongst the massive foliage of ornamental vines. From one of the *Rose* gardens, a charming rock garden is reached, the paths in which are formed of roughly-hewn Dartmoor stone, the spaces between the slabs being planted with dwarf Alpine

lection of *Primulas*, with thousands of self-sown seedlings of *P. japonica* coming up around.

The woodland and wild garden are traversed by moss-covered walks, winding beneath the trees, amongst which *Rhododendrons*, *Bamboos*, and uncommon shrubs are planted. *Arundinaria nitida* and *A. Veitchii* form large masses; *Rubus lasiostylus*, with its singular white stems arching round; *R. phonicolasius*, the Japanese Wineberry, handsome in its foliage, flowers, and fruits; *Sambucus canadensis*, which has fine, ornamental foliage, and produces immense heads of bloom; *Spiræa gigantea*, and other attractive foliage plants were observed in passing. There is a maze formed of *Beech* and *Hornbeam* in these parts of the grounds.

The path through the Pine trees leads to the aviaries, model dairy, farmyard, and the kitchen garden; the last is brightened in summer-time by borders of *Salpiglossis*, *Shirley Poppies*, and other flowers. In front of the gardener's house are a number of flower-beds: this season they were planted largely with scarlet and crimson-coloured, tuberous-rooted *Begonias*, the dull

season apparently suiting them admirably, for they presented a mass of colour. *Azara microphylla*, with its elegant sprays of shining green leaves, *Choisya ternata*, species of *Olearia*, and New Zealand *Veronicas*, with innumerable pretty shrubs not often seen in gardens, afford further variety. Altogether, the estate is maintained in as perfect a manner as can well be. It is personally supervised by Mr. Veitch.

AUTUMN FLOWERS IN THE SOUTH-WEST.

SOME of the *Nerines* flower well here in the open year after year. They are growing in a narrow, raised border, in front of a wall facing south-west. Last year there were over a dozen spikes of *N. Fothergillii* major, which is, without doubt, the handsomest of the family, bearing large heads fully 6 inches across, the scarlet petals appearing, in the sunshine, to be sprinkled with gold dust. This year there were only five flower-heads, but *N. Bowdenii* bloomed well, producing seven bloom-spikes. This species has flowered every year since it was first planted. Curiously enough, it is unlike the rest of its race,

was put in as a little plant last November, has made, as I mentioned in my last article, enormous growth, and, in September, produced a few of its attractive, flesh-pink blossoms. The Australian *Brachysema acuminatum* perfected a second crop of its red flowers in October, but it is not a very showy plant. *Plumbago capensis* flowered finely in August and September. It was put in as a small plant last November, but has made good growth, being now 5 feet high and as much across; I hope it will, in time, cover a 12-foot wall. In the spring, I received a present of a small plant of *Hermannia caudicans*, a name I cannot find in the horticultural dictionary. This bore yellow flowers, and even now, at the end of November, is still carrying some. As the rest of the genus appear to be natives of South Africa, this is probably a compatriot. It is entirely unprotected, but, as some South African shrubs stand the winters unsheltered, it may survive. *Alonsoa Warszewiczii* carried its scarlet flowers well into September, and springs up here every year from self sown seed. At Mount Edgcumbe it is a perennial, but in this locality it has always died in the winter. *Gilia coronopifolia* was beautiful in September.

of 10 feet, with trails of gorgeous scarlet flowers, which contrasted well with the glaucous foliage, and produced a glorious effect. *Diascia Barbæ* is a pretty little plant, with soft, salmon-pink flowers. It is generally treated as an annual, but, in the neighbourhood of Chepstow, it has proved perennial, and here lives through the winter. *Witsenia corymbosa* had only two flower-spikes this year, whereas three years ago it carried 55, each bearing from 50 to 60 blossoms, and, when in full bloom, was a marvellously beautiful sight. *Wyndham Fitzherbert, Kingswear*.

THE ROSARY.

CULTURAL HINTS FOR DECEMBER.

ALL arrears of planting should be completed as opportunity occurs, so that the work may be finished by Christmas. Severe frosts have appeared earlier this year than usual, and precaution should be taken to protect tender varieties of dwarfs by earthing up soil about them or covering them with Fern or light sprays of evergreens. During mild weather the protective covering should be removed. Before planting is resumed and where the ground is likely to be beaten down by heavy rains prick in, with a fork, some burnt earth, sandy grit, and wood ashes. All plants and cuttings should be given a good surface mulching of well fermented manure, which will help to protect and nourish the roots in cold weather. Although September was a very favourable month for the wood ripening, the subsequent heavy rains kept the sap active later than usual. Standard Roses should not be planted too deeply, but in the case of dwarf-budded Roses the union between the stock and scion should be well below the ground level, or the dry east winds of spring will cause injury before root action begins. Failure after planting is often due to neglect in well treading the soil about the roots. When newly-planted Roses are blown about by the wind the roots are likely to suffer; to prevent this put a brace across the stems in the row and tie the standards to it; the brace may be secured at intervals with a stake.

The planting of Roses during autumn and winter in town gardens is not always advisable; smoke and other impurities in the air have their effect, whereas in the spring a clearer and purer atmosphere affords a better chance to the plants. March and April should be selected for preference. Some of the best Roses for town gardens are the following: *Rosa rugosa* Blanc double, de Coubert, Cabbage Provence, Sweet Briars, Mme. d'Arblay, Queen of the Belgians, climbers, and of H.T.s and H.P.s *Caroline Testout*, *Magna Charta*, *Thos. Mills*, *Ulrich Brunner*, *Mrs. J. Laing*, *John Hopper*, *Anna Alexieff*, and *Gabriel Luizet*.

Hardy climbing Roses that have been neglected should be well pruned, the branches thinned, and the shoots trained either to wall, trellis, or fence.

The Roses in pots started into growth last month will now be making progress, and as December is one of the dullest months of the year the temperature should not exceed 50° to 55° by day with a decline of several degrees during the night. For the present, ventilation may be given for a few hours at the top of the house, closing the house early in the afternoon and damping down the stages earlier in the day. On occasional bright mornings, a light syringing may be given overhead, provided the foliage dries up before evening. It is beneficial to turn the plants round occasionally to the light. At the turn of Christmas, when the plants have made some growth, a dusting of Clay's fertiliser stirred into the surface soil will help them considerably. The first batch of grafted Roses will, if conditions have been favourable, be making headway, and the temperature of the pit may be increased. When there are signs of a good callus and some top



FIG. 169.—PERGOLA AT EAST BURNHAM PARK.

which are leafless when the flowers appear, retaining its foliage until the flower-spikes are thrown up. *N. flexuosa alba* also blossomed well. *Zephyranthes candida* produced many flowers, but not a single bloom showed on the larger and finer *Z. Atamasco*, probably owing to last year's dull summer, and, as this year has been worse, they will probably be flowerless next season. *Berberidopsis corallina* bore a profusion of drooping, scarlet flower-clusters in September. The plant does not look very well, as it has been allowed to get too dry, and it requires abundant moisture. *Manettia bicolor* carried its tubular scarlet and yellow blossoms well into the autumn. It is a plant that does well in the south-west, and is pretty when in full bloom. *Solanum aviculare* bore its large, deep-purple, golden-centred flowers until October. This is a self-sown seedling plant that appeared this spring, and has made prodigious growth, being now 6 feet high and 6 feet through. It is a tender species and the growth of this specimen is very sappy; though it is protected, it may succumb if we should experience a severe winter. *Tacsonia mixta* [quitensis], which

the tall, bright-scarlet flower-heads making a splendid show where the plants were grown in bold groups. It is always well to pinch back the seedlings when they are a few inches high, as this causes them to throw up several flower-heads in place of the one they would produce if unstopped. Some late-raised seedlings did no good, as they did not commence to expand their flowers until mid-November, and never perfected their blooms, so these plants should be raised as early as possible in the year. *Aconitum Wilsonii* flowered fairly well, but felt the shift severely, being only 3 feet in height, as against 6 feet in the old garden. The Shamrock Pea (*Parochetus communis*) was a glorious sight in October, being absolutely covered with pale-blue Pea-like flowers. Last year it died out in the old garden, and this spring I obtained some plants from Mr. Walpole, of Mount Usher, which, after the first few weeks, made prodigious growth, and smothered all their neighbours. The South African *Tulbaghia violacea* did not flower until the autumn, when it produced its rose-purple bloom-heads borne on long stalks. *Tropæolum Lobbianum* Fire King covered walls to a height

growth, fresh air can be gradually given during the day to dry up excess of moisture and strengthen the grafts. Before grafting, the stocks should be brought into the house for a few days so that the growth will be in advance of that of the scion. Those potted last will be ready at the end of January or in February for herbaceous or soft grafting.

Since being pruned the Roses planted out under glass are making good progress. Light syringings may be given during bright weather in the morning when the temperature is above 50°. In dull weather the moisture arising from the surface mulch will be sufficient.

Ventilate with caution, and in all cases guard against insects and mildew, remembering that these pests are less difficult to combat now than later in the season. J. D. G.

WHITE GARDEN ROSES.

It is unfortunate that many of our modern white Roses, however admirable in other respects, are so destitute of fragrance. This is largely owing to the fact that many of them are descended from Baroness Rothschild, which variety, however beautiful and productive, is, nevertheless, lacking in perfume. For this special reason I have discarded the gracious Baroness, perhaps somewhat unjustly, for many years. But her derivatives, at least, are sufficiently prominent in my garden, where, as a general rule, they are greatly admired for their handsome appearance, their large dimensions, their vigorous character and splendid floriferousness. The first very notable descendant of this prolific parent was Merveille de Lyon, introduced by Pernel, its famous raiser, in 1882. Impressive as it often was, under favourable conditions of culture and climate, it could hardly be termed a pure-white production, for it had always a faint, yet quite perceptible, suffusion of rose, which became greatly intensified in showery weather, thereby revealing a very serious limitation. Margaret Dickson, still one of the grandest of the New-towards Roses, which (seeing that some of its best attributes were attributable to the variety Lady Mary Fitzwilliam, I have always regarded as a half-hybrid Tea) has still more delicate pink suffusion, which tint, however, does not deepen so perceptibly as that of its predecessor under the influence of humid atmospheric conditions.

The most perfect of all the pure-white Hybrid Perpetuals is the incomparable Frau Karl Druschki (Lambert, 1901), the purest Rose of its own character in colour and the most commanding in dimensions that has hitherto appeared. It was, I understand, originally termed "The Snow-Queen," La Reine de Nieve, assuredly a much finer and more expressive name. It has, so far as I can discern, no fragrance whatever, though one of its parents was the richly-odorous Caroline Testout, while the other was Merveille de Lyon. Nevertheless, it is the grandest of pure-white Hybrid Perpetuals, and likely to retain this unique distinction for many years. Another superb Rose of imposing aspect is Marchioness of Londonderry, which, however, is only ivory-white in colour and (perhaps because its floral offspring are giants) somewhat sparing of its blooms. Among Tea Roses adapted for garden culture, one of the latest and loveliest is Molly Sharman Crawford, a veritable gem, which, were it only a little more vigorous, would be even more valuable. Among my own supreme favourites are The Bride, which has shining through its white petals a most delicate suggestion of green, and that extremely charming derivative from Souvenir d'un Ami, namely, Souvenir de S. A. Prince.

Niphetos is best adapted by its nature, which is somewhat susceptible, for conservatory cultivation. Aimée Vibert is a charming and prolific Noisette, but of this fair family and its not too numerous hybrids, by far the most graceful and attractively fragrant variety is Mme. Alfred Carrière. David R. Williamson, Manse of Kirkmaiden, Wigtownshire, N.B.

The Week's Work.

PLANTS UNDER GLASS.

By JOHN DONOGHUE, Gardener to JOSEPH PICKERSGILL, Esq., Bardon Hill, Westwood, Yorkshire.

Gardenia.—*Gardenias* cultivated for flowering in autumn and winter may be encouraged to flower again early in the new year, provided that the plants are manured liberally and kept in a warm atmosphere. The best specimens I have seen were planted out in beds provided with bottom heat, but this practice is not to be recommended for winter flowering plants, which should be confined in pots and supplied with diluted liquid manure from the farmyard and occasional dressings of some approved chemical fertiliser. Plants cultivated in pots can be kept clean from insect pests, such as brown scale and mealy bug, more conveniently than if they were growing in borders. Before the flowering stage is reached, the pots can be placed on their sides, in order that the plants may be syringed with an insecticide wash. When once the flower buds have formed, such pests must be sought for with a sponge and brush. Two additional pests, namely, Aphides and Thrips, are apt to make their appearance upon the plants during the flowering season when the atmospheric conditions are somewhat drier than usual. Therefore, the plants should be fumigated with a nicotine compound immediately before the buds begin to open, and, if the pests become very prevalent, the open flowers may be cut and further fumigations carried out. *Gardenias* are easily raised from cuttings inserted in spring or summer. In cases where large specimens are desired, three or more cuttings may be kept together in a pot and shifted into larger pots as more root-room becomes necessary. *Gardenias* are moisture and heat-loving plants. In the growing season, they require an atmospheric temperature at night of 70°, and this should rise to 75° or even 80° during the day. During the winter months and when the plants are in flower, a night temperature of 65° is sufficient. The plants thrive best in a fibrous, peaty compost, from which the fine particles have been shaken, but with added mortar rubble and charcoal which have been passed through a ½ inch sieve.

Rhododendron indicum (*Azalea indica*).—The variety *Deutsche Perle* is the earliest of the Indian *Azaleas* to flower; when plants of this variety have been subjected to early forcing for two seasons such plants may be brought into flower by Christmas without further forcing than they would get in a warm greenhouse.

THE KITCHEN GARDEN.

By JOHN DUNN, Kitchen Garden Foreman, Royal Gardens, Windsor.

Early Potatoes in pits.—Tubers should be selected for the earliest plantation, and placed in gentle warmth so that sturdy young shoots may be produced by the middle of December. Very little heat will be necessary to start them into growth. When the young shoots are about ½ inch in length the tubers should be planted in a heated pit, over a gentle hot-bed. The bed should be formed of fallen leaves, trodden tightly together, as only a slight bottom heat is desirable. The soil over the hot-bed should be at least 9 inches deep, and may consist of two parts loam and one part leaf-mould; loam which has been used in the Melon house will suit them well. The tubers should be planted in rows 18 inches apart, allowing 10 inches between the plants. The surface of the bed should be 2 feet from the glass. A temperature of 45° at night will be high enough, and as soon as the plants appear above the ground air must be admitted freely or spindly growth will be the result. *May Queen* is one of the best varieties for this early forcing, both for quality and productiveness.

Early Peas in frames.—If frames are available for Pea culture, a sowing may be made about the middle of December. But if the pits are at present occupied with other things the seeds may be sown in drills 3 inches deep, and covered with fine soil. Very little heat is necessary for this crop, but it requires a good, rich bed of soil. Old Melon or Cucumber soil will suit them well, and this compost should be made at least 12 inches deep and moderately tight.

Only dwarf varieties should be grown, and 18 inches between the rows will be quite sufficient for them. There are many good dwarf varieties, such as Harbinger, Sutton's Seedling, and Chelsea Gem. The plants must not be crowded, and air should be given freely in mild weather. Water must be sparingly given in cold and dull weather; do not damp the foliage overhead in dull weather or mildew may prove troublesome. The pits should be covered at night during severe weather.

Mushrooms.—The demand for Mushrooms is sure to increase as the supplies of other choice vegetables become less. In order to keep up a regular supply throughout the winter it is necessary to make preparation now by collecting all the available manure and turning it frequently in some dry shed. This material may be left thicker during cold weather to prevent loss of heat. When all danger of sourness is over, the manure should be removed to the Mushroom house and allowed to remain loose for a day or two, after which it should be turned and beaten tightly together; the bed when finished should be at least 15 inches in depth so that it may retain the heat as long as possible. Additional beds should be made up every three weeks during winter. If supplies are being gathered from houses in which new beds are made care must be taken to protect the Mushrooms from steam while the manure is being moved. A temperature of 55° is sufficient for the Mushroom house during cold weather.

Endive, &c.—*Endive* should be brought into a dark chamber in order to maintain a supply of blanched heads. The same remark applies to Chicory and other salad plants. Mustard and Cress should be sown weekly in boxes, and placed in heat, covering the boxes with paper until the seeds germinate.

THE HARDY FRUIT GARDEN.

By A. R. SEARLE, Gardener to the Marquis of NORTHAMPTON, Castle Ashby, Northamptonshire.

Planting and root pruning.—The severe weather during the past fortnight has retarded all planting and root-pruning operations, and the ground will be in a very sodden condition when the frost is over, rendering all such work impossible for some considerable time, especially in the case of heavy and retentive soils. Any fresh trees that may arrive from the nurserymen before planting is again possible should be "heeled in" for the time being. Make sure to place plenty of soil over the roots, as it may be several weeks before they can be planted permanently. Should very severe weather set in during the period the trees are heeled in, it will be wise to protect the tops of the trees: some rough straw or long stable litter should be got in readiness for the purpose, and if a few old mats are placed over the litter, they will prevent the straw from being blown about by rough winds. Should any trees be delivered from the nursery during frosty weather, it is advisable not to unpack them until the frost is entirely out of the wood and the packing materials. In the meantime, they should be placed in a shed just as they are until the weather becomes favourable, when they can be heeled in as advised above.

Permanent borders.—After the pruning and training of the trees have been completed, the surface of the borders should be lightly pricked up with a fork, for the top soil is sure to have become trodden somewhat firmly by the pruner.

General work.—Select scions of Apples and Pears that may be required for grafting purposes next season. Tie them in small bundles, affix labels, and heel them in on a north border until required for use in the spring. In pruning and training fruit trees, be careful to cut out all dead wood, and remove the old ties and shreds, as they are likely to harbour all kinds of insect pests. Collect the rubbish with the prunings, and place them on the fire heap to be burnt. When refastening the branches of fruit trees, be careful to allow ample room for the natural swelling of the stems. Black Currant bushes badly infested with the Bud-mite should be dug up, as advised in a previous Calendar, and conveyed to the rubbish fire; but in cases where the bushes have only a few enlarged buds, it will only be necessary to pick off the swollen buds and burn them.

THE FLOWER GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS,
Aldenham House, Hertfordshire.

An appliance for tying trees (see fig. 170).—In my notes last week, reference was made to an appliance for tying trees which I designed some years ago. It is distributed by Messrs. Wm. Wood & Sons, and the illustration (fig. 170) will afford readers some idea of its qualities. At Aldenham, this method of tying has equalled all expectations. The tie not only holds the tree se-

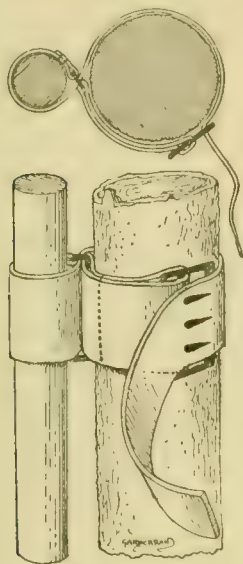


FIG. 170.—MR. BECKETT'S METHOD
OF TYING TREES.

curely to the stake, but it is capable of expansion as the stem of the tree expands. The material is sufficiently strong to last about two years, and, after a certain amount of expansion, it collapses before injury is done to the tree stem. This is the chief advantage that the tie possesses over ordinary supports of string and similar material.

The season.—Since writing my notes of last week there has been a spell of wintry weather with a succession of severe frosts, the most severe being that on the morning of November 23, when 17° were registered. Most kinds of ground work, including the planting of trees, was suspended for the time being. The frost followed closely upon damp, mild conditions, therefore the frost was all the more dangerous. The present opportunity may be taken for emphasising the necessity there is for having a supply of suitable material at hand for covering plants in frames and other subjects which require protection. In the event of another spell of similar weather, the time may be spent profitably in examining the stocks of bedding plants, removing any decaying foliage from them, loosening the surface soil, washing the pots and cleansing the surroundings. At such a period any seed that was saved from the flowering plants during the past season may be cleansed and placed in packets, which should be labelled with the name of the variety of plant. Specimen plants of Bay, Agave and Myrtle may be sponged with a safe insecticide. Labels may be prepared and the names written upon them. The borders containing herbaceous plants should be made to appear as tidy as possible by cutting the plants down to the ground level; let the surface soil be forked up and a mulch applied, such as manure from a spent Mushroom-bed, leaf-mould or well-rotted manure from the farmyard. Continue to clear up fallen leaves as quickly as possible, transferring them to suitable positions, where they will not give further trouble. When all the leaves are down, an effort should be made to have the shrubberies cleaned out, and all the leaves and rubbish should be picked up before Christmas. Vacant ground should be dug or trenched in suitable weather, leaving the surface in as rough a condition as possible until planting time.

Climbers.—The present is a suitable time for planting climbers. The choice of sorts is extremely varied, and most species can be obtained as established specimens in pots. These are much to be preferred to plants left upon the open ground, although the cost is but little

more. Make the ground perfectly firm around each specimen as it is planted, but do not tie the growths permanently until the ground has settled; simply loop them up in the meantime. For northern aspects only those with the hardest constitution should be employed, excluding Roses entirely, but for south and south-western aspects the suitable sorts are numerous, including evergreen and deciduous species. Few plants are more attractive here than *Solanum jasminoides*, which bloomed abundantly until the recent frosts. In a southern aspect the plant makes rampant growth, and is very beautiful with its snowy white flowers. *Ercilla* or *Bridgesia spicata* is an evergreen climber worthy of extended culture; it is neat in habit, self-supporting, and quite hardy on an eastern aspect. *Berberidopsis corallina* is a beautiful climber for a sheltered spot. *Akebia quinata* and *A. lobata* are quite hardy here, and they are well suited for covering poles and pergolas. *Actinidia arguta*, *A. chinensis*, *A. Kolomikta*, and *Menispermum canadense*, are excellent plants. *Periploca græca*, the Silk Vine, is a good, deciduous, flowering shrub for a north aspect. *Polygonum Balduianum* and *P. multiflorum* are both excellent plants for covering buildings quickly; *Passiflora cærulea* and the variety *Constance Elliott* (white) require a warm position. The foregoing are a few species one might plant in addition to the great variety of Vines, Clematis, *Hedera*, *Ampelopsis*, *Wistaria*, *Roses*, &c., though these latter yield the greatest amount of floral wealth.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence,
Bart., Burford, Surrey.

Pleione.—*Pleione maculata*, *P. lagenaria*, *P. Wallichii*, *P. praecox*, *P. concolor*, and similar species are now passing out of bloom, and require repotting immediately, and before those green shoots from which the flowers have sprung have produced a number of small white roots, as these brittle roots are very easily injured. Light, shallow pans which may be suspended, are suitable receptacles for the plants, those 10 inches in diameter holding about two dozen plants, being most convenient. These should be provided with good drainage, and over the crocks a thin layer of Sphagnum moss should be placed. The rooting material may consist of fibrous loam, *Osmunda* fibre, and Sphagnum-moss in equal parts, adding a moderate quantity of small crocks, and coarse, silver sand. In repotting, make each bulb quite firm. When the work is finished suspend the plants near to the roof-glass of the Cattleya or intermediate house. If the compost is fairly moist at the time no water need be afforded for about a week afterwards, and then but sparingly, until the roots push their way through the soil, and the leaves begin to unfold. The cooler-growing sorts, such as *P. humilis*, *P. Hookeriana*, *P. yunnanensis*, and *P. pogonioides*, having finished their growth, should be suspended in a light position in the *Odontoglossum* house, watering them often enough to prevent shrivelling. They should flower in or about February.

Trichopilea.—Amongst Orchids now in bloom is the lovely white *Trichopilea fragrans*, often called *Pilumna nobilis*, one of the sweetest-scented Orchids with flowers suitable for almost any form of decoration. This plant requires a trifle more warmth than is generally afforded to the *Odontoglossums*, but it will thrive very well at the warmest and driest part of the *Odontoglossum* house, if it is not possible to place it in a position near to the roof-glass in a cool intermediate house, where the temperature does not fall below 50°. While the plant is in bloom, and until new growth commences, it must only be given very little water indeed. *T. laxa* also in bloom requires similar treatment. Such species as *T. suavis*, *T. coccinea*, *T. tortilis*, *T. crispa*, *T. Wagneri*, *T. Galleottiana*, *T. rostrata*, *T. Backhouseana*, and *T. Hennisiana*, thrive well in a cool intermediate house temperature the whole year round. As most of these plants have now made up their growths, they must not be often watered. In some cases where plants have started late into growth they should be given a light position in the Cattleya house, and still be treated as growing plants. Any of these *Trichopileas* that need repotting should be attended to when growth recommences;

they require considerable pot-room. Well-drained *Osmunda* fibre, *Polypodium* fibre, and Sphagnum-moss in equal parts, cut up moderately fine and well mixed together with a moderate quantity of small crocks, may form the compost. Keep the plants well elevated above the rim of the pots, so that they can be watered easily without any water lodging in the young breaks, or around their base. All *Trichopileas* should be grown in a light position, but one which is not exposed to direct sunshine.

Miltonia exillaria.—Plants of this *Miltonia* now in full growth should be in the cooler part of the Cattleya house, and be kept well supplied with water at the root. At this season the tips of the leaves frequently turn black; to avoid this keep the compost drier for a few days, and do not damp or syringe between the pots. Examine the young growths occasionally, and carefully liberate any of the new leaves that may be adhering to each other. See that the sheaths around the base of the leading breaks do not prevent the young roots from entering the compost. Carefully examine these plants each night for woodlice, as these insects often do much damage to the roots. These remarks apply also to *M. Bleuana* and its variety *nobilior*. The rare *M. Phalenopsis* thrives best when suspended in small shallow pans close up to the roof of the Cattleya house.

FRUITS UNDER GLASS.

By B. GOODACRE, Gardener to Sir Ernest Cassel,
G.C.B., Moulton Paddocks, Newmarket.

Pineapples.—The directions given in a recent Calendar (see p. 315) may be generally carried out during December. Early-potted suckers will now be nicely rooted, and need careful attention as regards water, more especially if placed in a bed where the bottom heat is provided by hot-water pipes. In severe weather, when the fires are kept going to maintain the necessary temperature, additional attention to watering will be necessary. Never allow the plants to become so dry as to cause the soil to leave the sides of the pot. It is desirable, as the month advances, to choose the most forward plants to form the first batch of early Pines, and place them in a higher temperature, say, 65° to 70° at night, allowing a rise of 5° to 10° by day, according to the weather, and a bottom heat of 80° to 85°. Before plunging the pots, give the plants a thorough soaking with chilled water, as they are sure to be dry at the root. Maintain a humid atmosphere in the house by damping the paths and wall several times daily, but do not syringe the plants overhead, as moisture lodging in the centres is injurious at this time of the year. After removing the most forward plants, the main batch may be given more room, and the same treatment afforded as previously advised. Any plants which are still swelling fruits will require a bottom heat of 80°, with an atmospheric temperature of 70° to 75°; a little mild stimulant may still be given until the fruit changes colour. If the roof is covered with litter or Spruce branches during severe weather, as previously advised, the protection will be found useful in reducing the need for fire-heat. Lose no opportunity of giving just a "chink" of air at the top of the house for half an hour or so during the middle of the day, to sweeten the otherwise stagnant atmosphere. Towards the end of the month it will be necessary to make fresh beds of fermenting material, and these should be of sufficient depth to maintain a steady heat for some considerable time. Towards this end it is advisable to turn the dung frequently, and prepare it by adding a liberal quantity of good Oak or Beech leaves; the leaves will prevent the temperature from rising suddenly, and they will cause the bed to last good for a long period.

RUST IN CHRYSANTHEMUMS.—We have heard it urged, apparently on the principle that "a certain number of fleas is good for a dog," that a moderate attack of rust (*Uredo Chrysanthemi*) does no harm to Chrysanthemums. With this view, however, we are disinclined to agree, and would recommend careful cultivators to combat the disease by choosing rust-free plants from which to propagate, by dipping the leafy parts of the cuttings in liver of sulphur solutions, and by occasionally spraying the young plants with this specific.

EDITORIAL NOTICE

ADVERTISEMENTS should be sent to the **PUBLISHER, 41, Wellington Street, Covent Garden, W.C.**

Letters for Publication, as well as specimens of plants for naming, should be addressed to the **EDITORS, 41, Wellington Street, Covent Garden, London.** Communications should be written on one side only of the paper, sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Illustrations.—The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens or of remarkable plants, flowers, trees, &c., but they cannot be responsible for loss or injury.

Local News.—Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, DECEMBER 5—

Nat. Chrys. Soc. Conference at Essex Hall.

TUESDAY, DECEMBER 6—

Roy. Hort. Soc. Coms. meet. Scottish Hort. Assoc. meet. British Gard. Assoc. Ex. Council meet. National Vegetable Society Annual Meeting.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich—40°9'.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, November 30 (6 p.m.): Max. 44°; Min. 35°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, December 1 (10 a.m.): Bar. 29.8; Temp. 46°; Weather—Dull.

PROVINCES.—Wednesday, November 30: Max 43° Essex; Min. 35° Hull.

SALES FOR THE ENSUING WEEK.

MONDAY—

Dutch Bulbs, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 11.

TUESDAY, WEDNESDAY, THURSDAY, AND FRIDAY—

The Tenth Portion of Nursery Stock, at St. John's Nurseries, Worcester, by Protheroe & Morris at 11.30.

WEDNESDAY—

Dutch Bulbs, at 11; Roses, in variety, at 1.30; Palms and Plants, at 5; at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

THURSDAY—

Greenhouse Plants, Palms, Orchids, Lights, Furniture, &c., at "Pyrmont," Salway Hill, Woodford Green, by Protheroe & Morris, at 11.30.

FRIDAY—

500 Choice Established Orchids, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

Damping in Chrysanthemums. As *Chrysanthemum* growers know only too well, the flowers are liable to "*Chrysanthemum rot*"—that is to say, to premature decay. Mr. Crépin* attributes this disease, which may attack the disc or the ray florets, to the wide-spread parasitic fungus *Botrytis cinerea*, the spores of which only germinate readily in a moist atmosphere. In order to prevent the successful attack of this fungus, the use of nitrogenous manures should be avoided, particularly in the early vegetative stages. Such manures induce a luxuriant and sappy growth, whereby the plant is rendered more susceptible to the attack of the fungus. Therefore the soil in which *Chrysanthemums* are grown should be somewhat poor in nitrogen, and only at later stages of development should the plants receive nitrogenous manures.

After the flower-buds commence to expand, and the plants are placed in shelter, every means should be adopted to prevent accumulations of atmospheric moisture in the neighbourhood of the plants. Ventilate freely, and water sparingly and in the morning, is the advice of Mr. Crépin. Where possible, the house containing the plants should be closed completely early in the evening, and the roof should be well covered in order to prevent condensation of water on the plants. Mr.

Crépin even goes to the length of advising large growers to spread water-absorbing materials, such as powdered quicklime, on the ground between the pots.

An interesting confirmation of the value of the recommendation to withhold nitrogenous manures is provided by the results of manual experiments carried out by Mr. Decaux (of Blois), and published in the current number of the journal already quoted. The experiments consisted in five series of plants growing in soils poor in nitrogen, which were treated in the following manner:—(1) no manure; (2) a complete manure, namely one containing added nitrogen, phosphates, potash, and lime; (3) sulphate of potash and calcium phosphate (ground bones); (4) nitrogenous and phosphatic manures, but no potash, and (5) nitrogen and potash, but no phosphates. The net results of the experiment were as follow:—

The plants in unmanured series grew tall, produced weakly leaves fading readily in sunshine, and bore large flowers of poor shape. The plants grown without added phosphates were mediocre, and badly attacked by mildew, whilst those grown in soil to which nitrogen and phosphates, but no potash were added, were the poorest of all.

The series of plants which received a complete manure made splendid growth up to the middle of July, and bore immense, dark-green leaves on strong stems, but during August and September the plants deteriorated. Some, however, produced enormous flowers, which soon became discoloured; the plants, moreover, were attacked by rust.

The third series, that consisting of plants to which phosphatic and potash manures only were applied, gave the best results. The leaves and stems showed vigorous development, and the flowers were very large, shapely, well-coloured, and but little susceptible to rot.

The striking results yielded by these experiments make it worth while to mention the exact composition of the manure applied. This M. Decaux gives as follows:—50 grammes ($1\frac{1}{2}$ ounce) of sulphate of potash, and 100 grammes ($3\frac{1}{2}$ ounces) of ground bones per square yard. It should be remarked that the soil used in the manual experiments cited above contained a fair quantity of lime, and that it seems clear that where there is a deficiency in this substance lime should be added to the soil.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Committees will take place on Tuesday, the 6th inst. At 3 o'clock a lecture on the "Cooking of Vegetables" will be delivered by Mr. C. HERMAN SENN.

ROYAL HORTICULTURAL SOCIETY'S FIXTURES FOR 1911.—According to present arrangements fortnightly meetings will be held on January 3, 17, 31; February 14, 28; March 14, 28; April 11, 25; May 9; June 6, 20; July 18; August 1, 29; September 12, 26; October 24; November 7, 21; December 5. Other important dates are as follows:—January 16, examination for employés in public parks and gardens; February 14, annual meeting; March 14 and 15, Spring Bulb Show; April 5, general examination in horticulture; April 26, examination of school teachers in cottage and allotment gardening; May 23 to 25, Temple Flower Show; July 4 to 6, Summer Show at Olympia; October 10, 11, Autumn Fruit Show;

October 11, annual conference of affiliated societies; November 30 to December 2, Colonial Fruit Show. The Masters' Memorial Lectures will be delivered on February 28 and March 14, by Mr. G. F. SCOTT-ELLIOT, the subjects being "Recent Work in Seed Selection" and "Origin of Varieties." Other dates of interest are April 25, National Auricula and Primula Society's Show; July 11 and 12, National Sweet Pea Society's Show; July 25, Carnation Society's Show; August 30, National Vegetable Society's Show; September 14, National Rose Society's Autumn Show; and December 12, Perpetual-Flowering Carnation Society's Show. There will be no meeting of the Fellows on August 15 and December 19, but the Committees will meet as usual.

NATIONAL ROSE SOCIETY.—The thirty-fourth annual meeting will take place at the Westminster Palace Hotel on Thursday, December 8, at 3 p.m. In addition to the election of Officers and Council for the ensuing year, and the transaction of other general business, it is proposed to alter Rule 10 by omitting the following words: "and the 40 other Members of the Council," and to add a new rule as follow:—Rule 10a.—"The Council shall consist of 42 Members (exclusive of ex-officio Members) one-third of whom shall retire at each Annual Meeting by rotation, but shall be eligible for re-election. Such election to take place at the Annual Meeting." For the purpose of arranging the rotation referred to in Rule 10a, the Council at the first meeting after the passing of Rule 10a, shall determine such rotation for the ensuing three years by ballot, and the year of retirement shall then be placed against the names of all members of the Council. In the evening a conversazione will be held in the large room at the Westminster Palace Hotel from 4.30 to 6 p.m., to which all members are invited. A selection of music will be given at intervals during the conversazione. Each member is entitled on application to one free ticket and to purchase other tickets for friends, including ladies, at 2s. each. Application for tickets must be made to the hon. secretary on or before Saturday, December 3.

NATIONAL ROSE SOCIETY'S FIXTURES FOR 1911.—Mr EDWARD MAWLEY informs us that the National Rose Society will hold its Metropolitan Show in the Royal Botanic Gardens, Regent's Park, on Friday, July 7, and the Provincial Show at Ulverston, on Wednesday, July 19. The Autumn Show will take place in the Royal Horticultural Hall, Westminster, on Thursday, September 14.

NATIONAL SWEET PEA SOCIETY.—The annual general meeting will be held in the North Room, Hotel Windsor, at 3 p.m., on Thursday, December 15. In the evening, at 7 p.m., a conference will be held when papers on "Judging Sweet Peas" and "Cultivation of Sweet Peas" will be given by Mr. WALTER P. WRIGHT and Mr. GEORGE HERBERT respectively. For the convenience of members, dinner will be provided at the Hotel Windsor, at 5.30 p.m., the cost of tickets being 5s. each. Application for tickets must be made to the hon. sec., Mr. CHAS. H. CURTIS, Adelaide Road, Brentford, Middlesex.

AYRSHIRE CARNATION AND PICOTEE SOCIETY.—A meeting, called by advertisement by Mr. J. HENDERSON, Cumnock, was held in Kilmarnock on the evening of November 26 for the purpose of considering the desirability of forming a Carnation and Picotee Society for Ayrshire. Mr. DAVID WALKER, Kilmarnock, a well-known cultivator and exhibitor of Carnations and Picotees presided. The response was considered favourable to the scheme.

* Journal de la Société Nationale d'Horticulture de France (1910).

"ARBOR DAY" AT SANDGATE.—A society instituted for promoting an annual arbor day at Sandgate has met with every encouragement. The Folkestone Corporation, Lord RADNOR, and Mr. BROCKMAN have given their consent to trees being planted on Castle Green. The committee has decided to postpone the celebration until after the General Election.

"THE BOTANICAL MAGAZINE." The issue for December completes volume VI. of the 4th series. It is appropriate that the volume is dedicated to Mr. HARRY JAMES VEITCH, as it includes a large number of plants which have been introduced by the Veitchian firm.

PINUS ARMANDII, tab. 8347.—This interesting Pine was described by Dr. MASTERS in *Gardeners' Chronicle*, January 31, 1903, p. 66,

packages of tobacco. It is met with wild in the northern parts of Bahia, Brazil.

CORYLOPSIS VEITCHIANA, tab. 8349.—This species was found by WILSON in Western Hupeh, who forwarded seed to Messrs. JAMES VEITCH & SONS. Plants raised at the Coombe Wood Nurseries of this firm supplied the material from which the illustration in the *Botanical Magazine* was prepared. The flowers are produced in drooping racemes along the branches like a flowering Currant. The petals are of a primrose yellow colour, and the five stamens have reddish-brown anthers. Mr. W. J. BEAN, who is responsible for the description, states that the plant is apparently quite hardy, grows well in an open, sandy loam, and can be propagated by means of cuttings.

JACOBINIA SUBERECTA, tab. 8350.—This is a prostrate growing plant that sends up erect

Chronicle, June 12, 1909, p. 374, by Mr. ROLFE, who also writes the description in the *Botanical Magazine*.

CHEER FOR THE DESPONDENT.—What the trade Press in England has said about dwindling profits of florists, nurserymen and gardeners seems hardly borne out by the Government reports on business failures in these trades. Close records are kept, from which it appears that in the last five years there were only 254 failures, involving total liabilities of \$1,007,250, the English pound being figured as \$5 in the following record:—

Year.	Failures.	Liabilities.
1905	31	\$135,325
1906	32	\$311,715
1907	45	\$177,335
1908	48	\$219,055
1909	48	\$163,820



FIG. 171.—ROCK-GARDEN WITH PATH OF STEPPING-STONES AT EAST BURNHAM PARK. (See p. 408.)

figs. 30 and 31, from material sent home by Mr. E. H. WILSON. The tree has been referred to under several names, including *P. koraiensis*, to which it is most nearly allied. In its natural habitat it grows about 60 feet high, and has smooth, greenish-coloured bark. The leaves are produced in bundles of five.

NEOGLAZIOVIA CONCOLOR, tab. 8348.—This plant has a general appearance resembling a Billbergia, with the characteristic spiny leaf margins. The flower-spikes bear violet-coloured flowers set in a scarlet calyx. Like many other members of the Bromeliaceæ the leaves furnish a useful fibre, which is made into ropes for binding

flowering branches, terminated with long tubular flowers of bright scarlet colour. It is recommended as suitable for planting in hanging baskets in a warm plant house. Colonel H. BEDDOME, who furnished the material for the plate from plants growing in his garden at West Hill, Putney, recommends it to be raised annually from young succulent cuttings rooted in the spring, as large plants are not so satisfactory in flowering. As a potting medium Col. BEDDOME recommends leaf-mould, loam, sand, and Pea-shaped crocks.

DENDROBIUM SANDERF. tab. 8351.—The species was described and figured in *Gardeners'*

This makes an average liability for each of the 204 failures of only £987, or, in round figures, \$4,900. Similar figures are not available for the United States, but if they were it is to be doubted if they would make an equally good showing, certainly not in number of failures, and probably not in percentage of failures as compared with the numbers engaged in the florists', nursery and gardening business, or in the smallness of the average liabilities. And this in spite of the fact that the period covered includes the most prosperous years the rapidly expanding horticultural trades of the United States ever have experienced. *The Weekly Florists' Review*

SALTAIRE ROSE SOCIETY.—This society has had a successful season, and starts the new year with a cash balance of more than £300. The profits on last year's working amounted to £58 11s. 5d. The 50-guinea trophy, presented by Mr. G. C. WAUD, has been won finally by Messrs. ALEXANDER DICKSON & SONS, LTD., who have succeeded in winning it four times in succession. The society is making arrangements to replace it with a 100-guinea trophy, and this will be offered either for 72 blooms, distinct, or for 48 blooms, distinct, as the committee decides. The date for the next show is fixed for Tuesday, July 11, 1911. The hon. secretary is Mr. E. WRIGHT, Rosedene, The Glen, Saltaire.

LEAMINGTON FLOWER SHOW.—It has been decided to continue the summer show at Leamington. The prize list will be increased, and a determined effort will be made to attract the public from a wide area. Last summer's show, though but the second, in many respects rivalled some of the leading exhibitions. The dates for next year's show are July 28 and 29.

FOOTPATHS AND THE ELECTION.—Lord EVERSLEY presided over the recent monthly meeting of the Commons and Footpaths Preservation Society. Amongst others present being LORD ROBERT BRUCE, SIR WILLIAM VINCENT, SIR WALTER MURTON, the Master of the Charterhouse, and the secretary, Mr. L. W. CHUBB. It was decided, in view of the pending General Election, to make a strenuous effort to secure for the Society's Rights of Way Bill promises of support from candidates of all political opinions. The Bill has three times received a second reading in the House of Commons, and has twice been approved by a Grand Committee. Moreover, it has now received the support of all the large associations of the various Highway Authorities, and over 500 resolutions have been passed in its favour by Corporations and District Councils. Mr. P. BIRKETT, the society's solicitor, expressed the opinion that if the Bill passed into law it would reduce the expense of Rights of Way litigation by 75 per cent. The Bill seeks to bring into operation, in cases affecting footpaths, the principles of the Prescription Act, which have applied for nearly eight years to all disputes regarding private paths or other easements. It proposes to fix 20 years as the period of evidence required in the case of an estate occupied by the owner in possession, and 40 years where the estate is in the hands of trustees or a tenant for life. It was reported that during the last month the society had succeeded in securing the re-opening of 15 footpaths by means of friendly negotiation with the landowners.

THE CHILLING OF CUT FLOWERS.—Though the practice of exposing cut flowers for a short time to a fairly low temperature (about 40° F.) is not uncommon among the larger florists, it is doubtful whether the effect of this procedure in prolonging the life of the cut blooms is as widely known as it should be. *The Weekly Florists' Review* (Oct. 20, 1910) draws attention to the subject in an interesting note entitled "Refrigeration for Florists," and points out that the only precise information on the subject is that published by Professor J. MERCIER in *L'Industrie Frigorifique*. We agree with our contemporary in thinking that a careful investigation of the behaviour of the more important classes of florists' flowers with respect to chilling would be of considerable practical value. Precise information is wanted as to the length of time for which given kinds of flowers should be chilled, the temperature to which it is best to expose them, and whether, as appears to be the case, the chilling should be done in a saturated atmosphere.

"CROWN GALL" OF FRUIT TREES.—The current number of the *Journal* of the Board of Agriculture gives information that this disease is present in England. Specimens of Plum trees, Raspberry canes, Roses, and Chrysanthemums recently received at Kew have been found to be affected by galls at the crown of the stem or on the roots; it appears that these galls are identical with the affection known as "Crown Gall" in the United States, where the same and various other plants, including Apples and Peaches, are attacked. Before planting fruit trees, nurserymen and fruit-growers will do well to examine their stock carefully and discard any trees which show signs of "Crown Gall." It is important to obtain information as to the distribution of the disease in this country. The galls characteristic of this disease vary considerably in size, the larger ones being confined to the collar of the stem just below the surface of the ground. Young plants are more liable to the disease than plants which are well established. A fruit tree affected by "Crown Gall" grows feebly and yields much less than a healthy tree. Though there is still some doubt as to the exact organism which causes "Crown Gall," there can be no doubt as to the infectious nature of the disease. In the United States "Crown Gall" causes serious losses to orchardists. TOUMEX, of that country, considered that the disease was due to an organism closely allied to that which causes "Anbury" or "Finger-and-toe" in Turnips. The more recent and critical work of SMITH and TOWNSEND points to the view, however, that a bacterium is the primary cause of the injury, the organism described by TOUMEX being considered to be only a secondary agent. Nevertheless, the Chrysanthemums received at Kew contained the organism of TOUMEX, whereas no trace of the bacterium described by SMITH and TOWNSEND could be found.

WITCHES' BROOM ON SPRUCE AND LARCH.—Professor SOMERVILLE calls attention in the *Quarterly Journal of Forestry* (October, 1910) to the recent observations of TUBEUF on the cause of witches' broom of the Spruce, Larch and Pine. Hitherto the cause of the witches' broom, which is met with occasionally in these trees, has remained undetected, although fungi, bacteria, and mites have been suspected in turn of being responsible for the malformation. TUBEUF's observations and experiments appear to demonstrate that the exciting cause of witches' broom of the above-mentioned trees is not due directly to any external agent, but that it is a case of a sport or mutation called forth not by external but internal factors. Thus in January, 1907, TUBEUF obtained seed from a cone bearing witches' broom of the Spruce. The seeds were planted, and of the plants, which are now in their fourth year, though most are normal, a certain number are densely bushy, and in fact have the witches' broom form. It is therefore to be concluded that, as Professor SOMERVILLE points out, the witches' broom of the Spruce is due to an individual peculiarity which is transmitted from parent to offspring. The observation suggests that the remarkable dwarf Spruces used in rock gardens are derived from seed carrying the witches' broom character. What he has demonstrated in the Spruce, TUBEUF believes also to be the case in the Pine and Larch. It would be interesting to determine by further breeding experiments whether this abnormal character is inherited in a regular manner. Recent experiments have demonstrated that dwarfism is so inherited; that, for example, in the case of the Garden Pea dwarfs arise, when semi-dwarf races are crossed, in the proportion of 1 to 16. On the other hand, further experiments may show that the inheritance of the witches' broom character follows a more irregular course, like, for example, that which obtains in the case

of doubleness in certain florist's flowers, such as *Primula sinensis*. The fact that witches' broom in Spruce occurs generally on certain branches only points to its inheritance resembling that which obtains in doubleness of flowers rather than the more regular course of events which we know to occur in the inheritance of dwarfism. Nevertheless, the possibility is not excluded that the dwarf forms of various conifers, so much beloved by our allies the Japanese, are "extracted dwarfs," produced by crossing varieties, neither of which when bred true ever produces dwarfs. In any case, the observations of TUBEUF open up a promising field for further experiment, and confirm the urgency of the plea made recently by Dr. HENRY for experimental breeding of forest trees. From the practical point of view, the discovery of the non-parasitic origin of witches' broom in the case of the Spruce is of importance. Evidently there is no fear of the "disease" being spread from one tree to another in the manner that fungous diseases are disseminated, for the only source of the malformation is in the seed itself.

AUSTRALIAN GRAPES FOR THE ENGLISH MARKETS.—The Acting Agent-General for Western Australia (Mr. R. C. HARE) has received from Mr. R. L. GILBERT, Officer-in-Charge of the Western Australian Government Agency in Melbourne, Victoria, particulars of an interesting and important experiment in connection with the cool storage of table Grapes for export to London and other British markets. Several shipments of Western Australian Grapes arrived in London a few months ago and sold in some cases up to 1s. 4d. per lb. wholesale. Mr. GILBERT informs the Agent-General that early this year he received a consignment of Western Australian Grapes through the Department of Agriculture for exhibition at the Melbourne Government Agency. The Grapes were packed in bunches in granulated cork-dust in wooden cases containing about 23 lbs. of fruit each, precisely similar to the shipments which had been sent from Western Australia to the London market. The Melbourne consignment had been ten days in the steamer's hold before it reached Mr. GILBERT's hands, and it was placed by him in exactly the same condition as that in which it was received in the chambers of the Government Cool Stores, Melbourne. There the Grapes remained untouched for three months, at the end of which period (on July 11 last) the cases were brought out and opened in the presence of the Right Hon. Sir JOHN FORREST, G.C.M.G., ex-Treasurer of the Commonwealth, the Victorian Minister for Agriculture, the Government Viticultural Expert, and a number of members of the Commonwealth Parliament. They concur in reporting that the Grapes were found, after their ten days' sea journey and three months' cold storage, in a perfect condition. The varieties experimented upon were Almeria (known in Spain as Ohanez), Flame Tokay and Purple Cornichou. They were grown by Mr. BARRETT-LENNARD, of Guildford, Western Australia, who was also the grower of a shipment which realised 33s. per case of 23 lbs. in London a few months ago. Mr. GILBERT writes:—"The Ohanez (Almeria) opened up absolutely perfect, and the same can be said of the Flame Tokay. With regard to the Purple Cornichou, although the berries were perfectly sound, some of them fell away from the stalks when the bunch was lifted. The remarkable freshness and quality of the fruit excited great enthusiasm among those present, and it was unanimously agreed that the experiment had been a great success." Subsequently, several cases were sent to the Federal Parliament, which was in Session in Melbourne. "It was generally agreed among the members who inspected and tasted the fruit," says Mr. GILBERT,

"that it was in a perfect state of preservation and of excellent quality, the bloom of the fruit had been retained in a wonderful manner, and the berries were as firm and fresh as if the bunches had been cut on that very day." The Grapes which came to England from Western Australia in April and May last were stored only a few weeks between the time they were gathered at the vineyards and the time they were marketed in London, but the Melbourne experiment indicates that even three or four months' storage does not induce deterioration in freshness, firmness, flavour or appearance. Of four shipments of Grapes from Western Australia, totalling over 4,000 cases, one shipment averaged 14s. per case of 23 lbs., another 19s., a third 25s., and the best of all 35s. for 82 cases, which was also the top market price of the day for Grapes in London. The cost per case, including all charges, was 4s. 5½d., so that the net return to the growers was highly satisfactory. The Victorian Government Viticultural expert was so impressed by the success of the storage of Grapes at the Melbourne Cool Stores that he is procuring several thousands of cuttings of Flame Tokay from Western Australia for propagating at the Viticultural College in the State of Victoria, and an immense impetus has been given to the Grape-growing industry in Western Australia by the results of last season's London shipments. It is calculated by viticulturists that there are twenty million acres in Western Australia suitable for Grape growing, but if only a small proportion of that vast area is laid down in vines the amount of production within a few years should be sufficient to ensure a cheap and ample supply of high-quality table Grapes in British and European markets at a time of the year when home supplies are out of season.

PUBLICATIONS RECEIVED.—*Morphology of Gymnosperms*, by John M. Coulter, Ph.D., and Charles J. Chamberlain, Ph.D. (Cambridge: University Press.) Price 16s.—*Proceedings of the Academy of Natural Sciences of Philadelphia*. Part II., April–September, 1910. (Philadelphia: The Academy of Natural Sciences.)—*Journal of Genetics*, edited by W. Bateson, M.A., F.R.S., and R. C. Punnett, M.A. (Cambridge: University Press.) Price 10s. net.—*The Coming of Evolution*, by John W. Judd, F.R.S. The Cambridge Manuals of Science and Literature. (Cambridge: University Press.) Price 1s. net.

VANDA CÆRULEA SANDERÆ.

THE variety of *Vanda cærulea* shown by Messrs. Sander & Sons at the meeting of the Royal Horticultural Society held on the 22nd ult., presented a striking difference from the forms of this species hitherto exhibited. Instead of the flowers being tinged with blue, this variety had the tips and margins of the sepals tinged with magenta-pink, the petals being flushed with the same colour, whilst the lip was of a deep shade of magenta. The Orchid Committee recommended this extraordinary novelty a First-class Certificate.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

CEDARS AT EASTBURY MANOR, SURREY.—Calling a few weeks ago upon Mr. Noah Fuller, who has been gardener at Eastbury Manor for almost a generation, I was greatly interested in the magnificent specimens of Cedar of Lebanon which adorn the lawn. The trees are of considerable height and handsome shape, notwithstanding that many limbs have been lost in storms of wind and snow. There are four trees in one row and another which stands isolated. The biggest specimen measures 18 ft. in circumference at about 4 feet from the ground, and the others are respectively 13½ feet, 14½ feet, 14½ feet and 15½ feet. On the other side of the mansion a sixth tree has a circumference at the same height of 14½ ft. Another grand tree at the end of the lawn is a Sweet Chestnut 15½ feet in circumference. Eastbury Manor is the residence of Mrs. Ellice, and the whole place is maintained perfectly. *Horace J. Wright.*

HARDY BAMBOOS.—In his note on p. 396 Mr. Jas. Hudson does well to call attention to *Arundinaria nitida*. Amongst the numerous varieties in these gardens, it is certainly one of the most graceful, and is especially striking when grown as a single specimen on the grass. There are two forms of *A. nitida* in cultivation: one is more erect than the other, and it would appear that some nurserymen have a stock of one, while some grow the other, hence the diversity often seen in this variety. I saw some good specimens of *A. nitida* and other choice Bamboos recently in the lovely gardens of A. G. Soames, Esq., at Limber, in North Lincolnshire. Considering the comparatively short time they have been planted, they have done remarkably well, which shows that under proper management, even in that uncongenial district, a Bamboo garden can be made a success. Given a sheltered situation and a rich loamy soil, there should be no difficulty in growing Bamboos. Thorough protection from the north-east winds is most essential, for the plants suffer more from them than from hard frosts in winter. In exposed districts it is necessary to erect screens to protect them during the winter and early spring months. One of the most distinct and

plants, 5 yards to 6 yards through, in these gardens; some of these we are removing on account of their size. *A. nitida* is an upright growing species, and in dry winds or frosty weather is the first one to lose its leaves, but as soon as there is moisture and the frost is out of the air, it quickly rights itself. I consider that *A. anceps* is more ornamental, as this species bears tall, arching plumes, and the whole bearing of the plant is most graceful, and, moreover, it is always green and perfectly hardy. *Bambusa fastuosa* is an upright-growing evergreen plant, very ornamental, and one of the tallest growers in these gardens. *Phyllostachys aurea* and *P. flexuosa* are always graceful. *P. heterocycla* is always remarkable for its brightness and hardiness. *P. nigra* is one of the most beautiful of Bamboos and forms an ideal specimen. In *P. Marliacea* the fluted canes shine like enamel; it is a most graceful Bamboo. *Bambusa Veitchii* is a fine, broad-leaved, variegated plant, which is beautiful all through the winter. *Arundinaria auricoma* is a charming, dwarf Bamboo, having golden variegated foliage of an exceedingly soft, velvety appearance; it is quite hardy. *Bambusa Fortunei* has silver variegation in the leaves, and is perfectly hardy, being useful for planting in

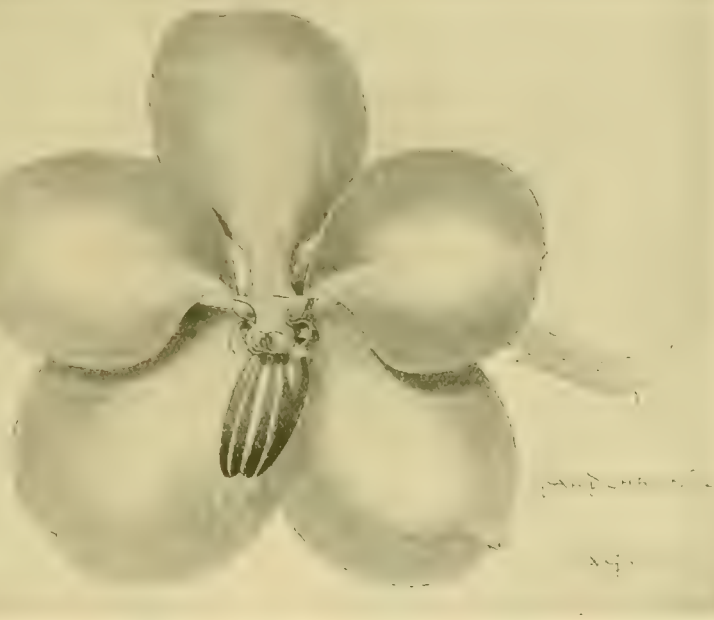


FIG. 172. —VANDA CÆRULEA SANDERÆ.

(Awarded R.H.S. First-class Certificate on November 22, 1910.)

beautiful Bamboos is *Arundinaria aristata*. It is a free grower of erect habit, but the shoots droop slightly at the tips, and its purple stems are very showy. This variety is seen to the best advantage when planted as single specimens on the lawn. For planting along the banks of a stream or as a background to ornamental water, *A. japonica* is very effective. It is a fairly broad-leaved, vigorous grower and spreads rapidly. *A. Veitchii* is a dwarf-growing variety well adapted for planting in the rock-garden. *A. Fortunei* variegata is showy and looks well bordering a walk in the wild garden, or on the outskirts of a shrubbery. *Phyllostachys fastuosa* is quite distinct and erect-growing with fairly broad leaves. It attains a height of 15 feet and looks well associated with shrubs, and as a background to dwarfier varieties. *P. nigra* is an attractive variety and vigorous grower, but with us one clump has flowered badly this year. A large clump of *P. Quiloi* flowered a year ago, but several plants of this variety remained quite immune from this defect. *P. aurea* is a handsome and vigorous growing Bamboo, and is one of the best varieties for massing. *J. Gardner, Batsford Park Gardens, Gloucestershire.*

—This species is certainly one of the hardest Bamboos, but it is not so handsome as others that are equally hardy. I do not wish to depreciate *A. nitida*, as I like it, and there are several very large

borders amongst general plants. These are only a few Bamboos which have suffered no harm after exposure in these gardens to 24° of frost. *W. A. Cook, Leonardslee Gardens, Horsham.*

THE BIRD SANCTUARY.—During severe weather, such as we are now experiencing, my committee is accustomed to put out food in the Brent Valley Bird Sanctuary for the benefit of the birds. At this time of year, our funds are usually low, and we should welcome gifts of bladders of lard, cocoa-nuts, bird seed, and meal-worms. Subscription would also be useful, as at present our only income is derived from the sale of nesting boxes made in the sanctuary by the keeper. *Wilfred Mark Webb, Honorary Secretary of the Selborne Society and Chairman of the Brent Valley Bird Sanctuary Committee.*

WEATHER AT LEONARDSLEE.—In the week commencing November 20, we registered 12° of frost, on Tuesday, November 22, 12°, and on the next day 10°. The thermometer never rose above 40° all the week till Sunday night, or rather early Monday morning, when the mercury reached 50°. It remained nearly stationary till 6 o'clock, when it commenced to fall again, and continued to go down till 10 a.m., when it registered 36°, after which it commenced to ascend again. The readings were taken from a self-registering and recording thermometer. *W. A. Cook, Leonardslee Gardens, Sussex.*

MONTBRETIAS.—Mr. Beckett states, on p. 335, "The bulbs of Montbretias may now be lifted for storing away for the winter, as excessive wet would cause the bulbs to decay." In the gardens here a border some 30 yards in length and 5 feet in width contains about 20 clumps of Montbretias. My employer informs me that they have been planted about five years. The border faces south, with a Beech hedge 10 feet in height at the back: the soil is a sandy loam resting on sand. Some of the clumps have produced as many as 60 flower-spikes this season, and the old inflorescences are thickly set with seed pods. The foliage is still green, and the seed pods are of a light brown colour, giving the plants a neat appearance, nearly as attractive as when they were in flower. My employer says there were from 6 to 12 bulbs planted in each clump, and now there are more than 60 in several of the clumps: how they have increased in such a short time is astonishing. I do not believe the extra labour of lifting the bulbs now and planting them again in the spring would be productive of better results. *I. Johnson, The Lodge Gardens, Halesworth.*

Few gardeners will disagree with the advice given by Mr. Divers on page 318 as to the advisability of dividing and replanting Montbretias every two or three years. The bulbs increase rapidly in good garden soil and quickly form a tangled mass, the growths producing puny flower-spikes compared with those having ample space to develop. *Schizostylis coccinea* and *Campanula glomerata* require similar treatment to obtain the best results. There can be no two opinions as regards the value of Montbretias for furnishing cut blooms, and nothing is better to add than their own foliage when arranging them in a vase. They are also very serviceable as pot plants. Montbretias prefer a sunny position out-of-doors and enjoy copious waterings during dry summers. *J. Mayne, Bicton.*

There are clumps of Montbretias in this island which have not been divided for several years. During the past season they have made strong growth and produced abundant flowers on long, strong spikes. A batch removed (owing to building operations) and planted very thickly have also flowered profusely. This is all the more interesting because they are planted in a fully-exposed position and only a few feet above high-water mark. Two or three clumps planted in boggy soil and in partial shade have flowered fairly well and made strong growth. The soil here varies much in texture: that in which the Montbretias are growing is a light vegetable loam. *Kniphofias* (*Tritomas*) in a north border of an enclosed garden have also grown into remarkably fine specimens, and for months past their fine flower-spikes have been conspicuous objects. *C. Ruse, Lambay Island, Rush, Co. Dublin.*

It might interest those of your correspondents who have given their experiences as to the benefits accruing, or otherwise, from the annual or biennial lifting of these plants, to know that Mr. Davison, Westwick Gardens, near Norwich, lifts the whole of his plants each year at the end of October. If my memory serves me aright, all the plants are lifted, including seedlings of the first year. For the most part the rootstocks are suspended in a shed or other place secure from frost, where they remain till the opening days of April. No one having seen the robust vigour of the plants at Westwick, their freedom from disease, and prolific flowering, could for one moment doubt the wisdom of Mr. Davison's method of treating his plants. Obviously, the Montbretia enjoys a long season of rest, and the isolated plant, as opposed to the crowded groups of undeveloped corms which are to be seen so frequently in gardens, produces the finest display at flowering time. *E. H. Jenkins.*

WASPS.—On reading Mr. A. C. Bartlett's note on p. 353 on queen wasps, I thought we were getting rid of one destructive enemy or, rather, that they were decreasing rapidly. On November 12, to my surprise, I found a very strong wasps' nest in the bank close to the lake; the insects were as busy as if it were August. I should think it unusual to find them so late in the year. At several country shows they award prizes for the greatest number of queen wasps killed; this is a great help in combatting the pest. *W. Edwards, The Hall Gardens, Crawley, Sussex.*

PARTI-COLOURED PAPAVER RHÆAS.—The accompanying illustration (fig. 173) represents a bloom taken from a wild specimen of *Papaver Rhæas* found by me growing with normal examples at Dunstable. The plant was a small one, with a single stem and a solitary flower at the apex. *Papaver Rhæas* is exceedingly common on the calcareous soil of Dunstable, and it varies but little in its crimson-scarlet flowers. I have, however, seen it rose colour and very rarely pure white. This bloom would seem to be a hybrid.



FIG. 173.—PAPAVER RHÆAS WITH PARTI-COLOURED PETAL.

between a white and scarlet example, as may also be the rare rose-coloured form, but the bloom illustrated is remarkable for the strange distribution of the colours, two petals being wholly scarlet, one white, and the fourth half white and half red, the colour division being exactly up the centre of one of the petals. The white was pure white, without the slightest indication of scarlet or rose. So far as I know this specimen does not appear to agree with Shirley



FIG. 174.—VINCA MINOR WITH PARTI-COLOURED PETAL.

Poppies, although it is possible that this form may sometimes appear amongst them. A few years ago an illustration was published in the *Gardeners' Chronicle* of a bloom of *Vinca minor* (reproduced in fig. 174) in a parti-coloured state. I noticed the plant in a garden near here where the white and purple forms were cultivated. *W. G. S.*

CARNATION RUST.—I have used sulphide of potassium for Carnation rust with very good results. I dissolved 1 ounce to each gallon of water, and dipped the plants in the solution. In a few days, after dipping, I went over them with a small brush to catch any disease patches which had not been destroyed. The plants are now clear of rust; I enclose a few leaves which were dipped three weeks ago. *L. Harrington, The Gardens, Condover Hall, Shrewsbury.*

CHRISTMAS ROSES.—I am proud to know that such a well-known authority on hardy plant cultivation as Sir Herbert Maxwell reads my *Calendar* on the "Flower Garden," and I welcome his friendly criticism. I may point out that it was my intention to refer only to *Helleborus niger*, the species generally known as the Christmas Rose, and not to the species of *Helleborus* generally. Few plants resent disturbance at the roots more than *H. niger*, and I particularly mentioned loosening only the surface soil with a fork. On many kinds of land, especially that of a stiff retentive nature, such as the soil at Aldenham, this is advantageous rather than otherwise. I have found a surface dressing of decayed manure an advantage both in improving the quality of the flowers and protecting them against severe frost. Many well-known authorities advise mulching with manure in the spring of the year, but my experience teaches me that November is the most suitable time, and to have the flowers in perfection at Christmas and during mid-winter it is necessary in most parts of the country to assist the flowers to open at their best by placing handlights or other suitable glass coverings over the plants. *E. Beckett.*

SAXIFRAGA LANTOSCANA.—On returning from abroad my attention is drawn to Mr. Robinson's letter on *Saxifraga lantoscana* (see p. 371). So far as this goes, a seven-year-old *Handlist* need not necessarily, I think, be held to have a quasi-papal infallibility, and, of course, Prof. Burnat is obviously a far greater authority on the flora of the Maritime Alps. However, on reference to him, I find that he also makes *S. Bellardii* and *S. lantoscana* mere varieties of *S. lingulata*, so that *cadit questio*, my high claims for my beloved *S. lantoscana* ought certainly to subside, although I must add that *Correvois's Atlas de la Flore Alpine* accords full specific rank to the plant. However, there is no matter for any very lethal controversy, for even granting the subsidiary status of *lantoscana*, it is a plant so completely and so incurably different from *lingulata* that it must always, from the cultivator's point of view, be placed as a separate "species," and as such, with all due reservation, spoken of. I would even dare to suggest that the three plants *lingulata*, *lantoscana* and *cochlearis* are all, perhaps, local developments of a common original which, in ancient days, pervaded the limestone ridges of the Maritime Alps, even as unmodified *florulenta* still occupies the granitic. These three plants, forms or species, seem never to gradate into one another, and where hybridisation occurs it is with one of these and *Aizoon*. Such, with Mr. Robinson, I believe, are the *Correvoisian lantoscans*: these are no longer in my collection, but I have now a large series of all three plants, collected on their native rocks this year, and among them, for instance, from the gorge of the Vésubie, I have a fine rosetted, poor-flowered *lantoscana*, which puzzles me the more that I know of no *Aizoon* in close proximity, but *Aizoon* is clearly implicated, and not either *lingulata* or *cochlearis*; and on the Pass of Pesio I found (and left) an ugly and almost certainly mongrel *Saxifraga* suggesting a *mesalliance* of *lingulata* with *Aizoon* (*cochlearis* did not occur there, nor have I, so far, happened on the two together). Now let us consider the species. *Saxifraga lantoscana* is entirely restricted to the Valley of the Vésubie, and varies not at all essentially, showing no sort of tendency towards *lingulata*. Then, in the eastern valleys, comes *S. lingulata*, completely distinct and equally invariable. (For, in talking of *lantoscana* as "polymorphic," the term must only be taken to mean small differences in size of flower or precise length of leaf—variations, that is, within the very narrowest limits, never shading towards other forms, or showing anything like the radical diversities that so bewilder one among the *Aizoons*.) Now, while *S. lingulata* remains always the same on its native rocks, though it is obviously very close to the smaller and different-habited *lantoscana*, and though their young seedlings are indistinguishable, there does occur with *lingulata* a real variation of *lantoscana* which, if the two plants were merely forms of one another, so to speak, ought certainly to shade off into various missing links. For, while Burnat restricts true *lantoscana* to the Vésubie, he gives the varietal name of *Bellardii* to a form of *lantoscana* which anyone may see for himself growing in the Eastern Maritimes actually in and among *S. lingulata*. It is, however, uncommon by comparison with either

lingulata or cochlearis: lantoscana clearly feels that it belongs only to the Vésubie, and cannot luxuriate of its own right in the territory of its cousins. Now, in the summer, I hunted long and wide, and have just returned from yet another searching quest among these; and never once, on hillsides bristling with Saxifrages, did I find a plant of lingulata which showed the very slightest tendency towards Bellardii, nor a single Bellardii with any inclination towards lingulata. The two plants, born, perhaps, of a common parent, seem to remain by now incurably distinct. And before I finish with these two, I will add that I know of several splendid and high-named varieties of lantoscana, but should be glad of Mr. Robinson's further enlightenment. Of lingulata I know no garden forms, but am amused to see that Mr. Robinson boldly cites the Oxford plant, whose dwelling-place I myself had cunningly dissembled. With regard to S. cochlearis, I would remark that, while both lingulata and lantoscana show a marked preference for shady exposures (marked indeed, but less inveterate in the case of lingulata), cochlearis is the sun-tolerating member of the trio, bearing heat, in point of fact, with such philosophy that it is even found above the Mediterranean at Portofino. It certainly occurs in dank dells (as below Saorgio, abundantly), but here, by its comparative rankness, shows itself not so well at home as on such sun-beaten rocks as those below San Dalmazzo, where it hangs in vast and thriving cushions. And might it not be a conceivable theory that these sun-loving proclivities (or accident of original place) have forced the plant to develop in the direction of smaller foliage and wider masses? For it is hardly possible not to feel that, while lantoscana is very close to lingulata, cochlearis is quite as close to lantoscana, and might almost be recognised as the compressed, sun-loving development of a lost Saxifrage, whose other nearest branch diverged into northerly gullies and became ultimately the larger and diffuser S. lantoscana. With regard to the unilateral flower-spikes, this tendency, I think, is clearly marked even in S. cochlearis, though not to the same extent as in the other two. But a spike of cochlearis is far closer in design to lingulata and lantoscana than to Aizoon or longifolia. The whole question, of course, of the relationship of these three plants needs a great deal more working at on the spot. My own double huntings of this season produced nothing which showed any trace of intermediateness or indefiniteness between any of the three species themselves, though Aizoon interferes and is responsible for occasional confusions. In our own gardens we all know how powerfully Aizoon forces its attentions on both cochlearis and lantoscana, and with what diverse results—results that are probably often responsible for the dubious lingulatas and lantoscanas from which we have long been suffering. For, as I repeat, the real plants are so essentially invariable as to be always unmistakable—at least, so far as I can see. Since writing this, I have been comparing my collected plants of S. cochlearis with old bought plants: with the conclusion that the type cochlearis of the Roja Valley is a much bigger plant in all its parts than the type cochlearis of gardens. It is nearer to what is called S. cochlearis major, and in certain circumstances its approximation to S. lantoscana is very clearly suggested. *Reginald Farrer.*

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

NOVEMBER 22.—Present: E. A. Bowles, Esq., M.A., F.L.S. (in the Chair); Messrs. W. E. Ledger, J. Douglas, R. Hooper Pearson, A. Worsley and F. J. Chittenden (hon. sec.), with W. W. Pettigrew (visitor).

Pine seeds.—Mr. J. DOUGLAS, V.M.H., drew attention to the sale of the seeds of *Pinus Pinea* under the name of "pignolia" in Bournemouth and elsewhere. They are used for flavouring, &c.

Gentiana Pneumonanthe forma alba.—Mr. CHITTENDEN showed a white-flowered specimen *G. Pneumonanthe*, found by Admiral Carr on Chobham Common, and already referred to in these columns (see p. 372).

WOOLTON CHRYSANTHEMUM.

NOVEMBER 16.—This show fully sustained its high position as an effective exhibition. Chrysanthemums in pots were unusually numerous, being staged across the end of the room, making a bold and effective feature.

A Challenge Vase, the gift of the President, Sir W. H. Tate, Bart., was offered for the best exhibit of 24 Japanese blooms in not fewer than 18 varieties. It was secured by W. TOD, Esq. (gr. Mr. G. Eaton), for the third time, thus becoming his property. The blooms were fresh and of good size; Col. J. B. GASKELL, J.F. (gr. Mr. J. Stoner), was placed 2nd.

Sir W. H. TATE, Bart. (gr. Mr. G. Haigh), took the lead in the class for 18 Japanese blooms, distinct, with a good stand; the same exhibitor was also to the fore in the class for 18 Incurved blooms.

For 12 Japanese blooms, J. P. BARR, Esq. (gr. Mr. T. Keightley), led, and for the corresponding class of Incurveds, T. CLARKE, Esq. (gr. Mr. J. Clarke), was the most successful exhibitor.

In the class for 10 Japanese and five Incurved blooms, arranged in vases with any foliage, Mr. G. HATCH was placed 1st, and the same exhibitor was successful in the class for four vases of incurved sorts, three blooms in each vase.

The class for nine vases of single varieties, distinct, nine blooms in each vase, brought four competitors. Woolton is held in high repute for the displays of single Chrysanthemums, a handsome Challenge Vase being presented by A. H. Tate, Esq. Mr. G. EATON secured the coveted position with a wonderful collection of flowers, remarkable for their fine substance, form, and purity of colour; moreover, they were arranged admirably; it is difficult to make a selection in such a meritorious stand, but possibly Edith Pagram, Admiral Seymour, Metta, G. W. Forbes, and Mensa were the choicest flowers. The other prizewinners in this class were Mr. T. KEIGHTLEY, A. T. MATHER, Esq. (gr. Mr. H. Howard), and S. S. BACON, Esq. (gr. Mr. J. Rothwell).

CHRYSANTHEMUMS IN POTS.—The trained specimens were models of good culture and form. Mr. T. KEIGHTLEY showed the best three plants, having heavily-flowered specimens. W. CUNNINGHAM, Esq. (gr. Mr. W. Wilson), led in the three classes for single plants of Incurved Pompoms and single sorts. Mr. HAIGH had the best reflexed, and Mr. T. KEIGHTLEY the best Anemone variety. In the other plant classes prizes were won by Mr. G. HAIGH, J. W. HUGHES, Esq. (gr. Mr. J. McColl), Mr. HOWARD, A. G. DENT, Esq. (gr. Mr. G. Hodnett), Mr. G. EATON, and Mr. T. KEIGHTLEY.

FRUIT.—Mr. J. MCCOLL had the best black Grapes, showing Black Alicante, and Col. W. H. WALKER, M.P. (gr. Mr. J. Hoggarth), the best white Grape in Muscat of Alexandria.

Mr. J. CLARKE was the winner of the 1st prize for six varieties of vegetables in the gardeners' class, and Mr. JAMES GORE in that for farmers.

BRISTOL CHRYSANTHEMUM.

NOVEMBER 16, 17.—This society held its 47th annual show in the Victoria Rooms, Bristol, on these dates. The exhibition proved to be the best, especially with respect to Chrysanthemum blooms, that has been held for several years past. Fruit, and particularly Apples and Pears, constituted another important feature.

There were two groups of Chrysanthemum plants, arranged in a space of 50 square feet. The better one was shown by Mrs. STUCKY WOOD (gr. Mr. F. A. Burt); J. BUCKLAND, Esq. (gr. Mr. Hunter), was the other exhibitor.

Mrs. ST. VINCENT AMES (gr. Mr. Bannister) was awarded the 1st prize for a group of Chrysanthemums and ornamental-leaved plants, arranged in a space of 50 square feet; 2nd, L. I. NOTT, Esq. (gr. Mr. P. Thoday).

Two groups of miscellaneous plants were staged, the better one by Mr. ELLIS, Weston Nursery, Weston-super-Mare, who employed Palms, Crotons, Azaleas and Ferns, with Oncidiums, Cattleyas, Poinsettias, and Lilioms; 2nd, Sir W. HOWELL DAVIES (gr. Mr. J. T. Curtis).

CUT BLOOMS.

The class for a collection of 36 blooms of Japanese Chrysanthemums in not fewer than 18 varieties made a splendid display, there being

six exhibits. The executors of Lady ASHBURTON (gr. Mr. G. Hall) led with fine, deep, well-coloured blooms of Lady Talbot (adjudged the best bloom in the show), Mary Inglis, Maud Jefferies, W. A. Etherington, John Peed (a grand specimen), Annie Hamilton, Purity, Mrs. J. C. Neil, Miss M. Hankey, Ernest Godfrey, and Mrs. F. W. Vallis. Mr. IGGULDEN, Frome, who was placed 2nd, also showed well, amongst his best blooms being those of Mme. G. Rivol, Mme. P. Radaelli, Frank Jolliffe, (splendid in colour), W. Mease, and Mrs. W. Iggulden. The Executors of Lady ASHBURTON excelled in the class for 12 blooms of Incurved varieties.

VASE CLASSES.

These were particularly attractive, and included some of the best blooms in the show. In the class for six vases of Japanese varieties, distinct, three blooms in each vase, there were five exhibits. The executors of Lady ASHBURTON again won the 1st prize, having Mrs. G. Mileham, Lady Talbot, F. S. Vallis, Mrs. F. W. Vallis, Mary Inglis, and Annie Hamilton; J. A. WALLER, Esq. (gr. Mr. C. Vincent), was placed 2nd.

Mr. IGGULDEN secured the 1st prize for six blooms of any variety shown in two vases, having grand blooms of Mme. P. Radaelli; 2nd, H. CORNELIUS, Esq., with J. H. Silsbury. There were 12 exhibits in this class.

Other winners of 1st prizes in the Chrysanthemum classes were: (1) six blooms of a white Japanese variety, Mr. IGGULDEN, with Purity; (2) six blooms of a yellow Japanese variety, Mr. IGGULDEN; and (3) six vases of single varieties, distinct, F. CALVERT FISHER, Esq. (gr. Mr. A. O. Shelton).

There were eight classes for Orchids. As these plants were staged together they made a showy feature. Col. CARY BATTEN (gr. Mr. Spowage) was awarded the 1st prize for a group arranged with Ferns and other suitable plants in a space of 6 feet by 4 feet.

Classes were provided for such plants as Primulas, winter-flowering Begonias, Cyclamen, small Ferns, Salvias, and ornamental fruiting plants, which were shown in capital condition.

FRUIT AND VEGETABLES.

Fruit was provided for in 16 classes, the chief one being for a collection of six dishes, in which three exhibits were staged, H. ANDREWS, Esq. (gr. Mr. J. R. Tooley) being awarded the 1st prize, having excellent Black Alicante Grapes, and Cox's Orange Pippin Apples, and good Muscat of Alexandria Grapes, Early Favourite Melon, and Bergamotte Espersen and Beurré Bachelier Pears. G. A. GIBBS, Esq. (gr. Mr. Wilkinson), followed closely for the 2nd prize.

The best Muscat of Alexandria Grapes were shown by Mr. ANDREWS, who also excelled in the classes for Black Alicante, Gros Colman, and Mrs. Pince, staging grand bunches from every point of view. The best Lady Downe's were shown by R. DALTON, Esq. (gr. Mr. R. H. Jennings).

The best dishes of Pears out of six collections were shown by Mrs. ST. VINCENT AMES (gr. Mr. Bannister); 2nd, Lord ISLINGTON (gr. Mr. McIntosh). Several contested the class for four dishes of Pears, Mrs. ST. VINCENT AMES again led, followed closely by Mr. LITTLE.

Apples were staged in first-rate condition. In the class for six dishes of dessert varieties, 16 exhibits were forthcoming. The leading one being shown by G. POW, Esq., who had excellent fruits of Rival, Cox's Orange Pippin, Allington Pippin, Ribston Pippin, Lord Burghley, and Baumann's Red Reinette; 2nd J. H. VIRGO, Esq.

Messrs. Jas. Carter & Co., Sutton & Sons, J. Garaway & Co., Webb & Sons, and Clibrans each offered prizes for collections of vegetables.

NON-COMPETITIVE EXHIBITS.

Gold Medals were awarded to the BRITISH COLUMBIAN GOVERNMENT for Apples, Messrs. J. CYPHER & SONS, Cheltenham, for Orchids, Messrs. CLIBRANS, Manchester, for vegetables, and Mr. S. MURRIEN for floral designs.

Silver Gilt Medals to Messrs. GARAWAY & Co., Bristol, for Apples, Zonal Pelargoniums and decorative plants, and to Messrs. PARKER & SONS, Bristol, for floral designs.

Silver Medals to Messrs. STUART LOW & Co., Enfield, for Orchids, Messrs. E. PARSONS & Co. for Bulbs, &c., and the TILEHURST POTTERY Co. for horticultural pottery.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

NOVEMBER 17.—*Committee Present:* Messrs. E. Ashworth, R. Ashworth, Ashton, Cowan, Cypher, Keeling, Parker, Shill, Thorp, Ward, and Weathers (hon. sec.).

J. H. CRAVEN, Esq., Keighley (gr. Mr. Corney), exhibited *Cypripedium Fairrianum*, "Beeche's variety," a distinct form of rather large proportions and very light in colouring. (Award of Merit.)

S. GRATRIX, Esq., Whalley Range, was awarded a First-class Certificate for *Cypripedium* × *Queen Mary*, a good hybrid between *C. × Eson giganteum* × *C. insigne* "Harefield Hall variety."

W. THOMPSON, Esq., Stone (gr. Mr. Stevens), exhibited a few interesting plants, which included *Odontoglossum* × *Thompsonii* var. *pumilum*, *O. crispum* var. *Eclipse*, and *O. × ardentissimum* var. *Grairianum*, each of which received Awards of Merit.

W. R. LEE, Esq., Heywood (gr. Mr. Woodhouse), received First-class Certificates for *Cypripedium* × *Antinous*, and *Cattleya Leucae* var. *magnifica*, and a Cultural Certificate for *Odontoglossum* × *Harryano* *crispum*, carrying an enormous spike of flowers.

Messrs. J. & A. McBEAN, Cooksbridge, received Awards of Merit for *Cattleya* × *Suavior* var. *alba* and *Odontoglossum* × *Harryano* *crispum* var. "The King."

F. A. HINDLEY, Esq., Gt. Horton, Bradford, was awarded a Silver Medal for a miscellaneous collection.

R. G. THWAITES, Esq., Streatham Hill, exhibited a good collection of *Cattleya* hybrids. (Vote of thanks.)

Messrs. SANDER & SONS, St. Albans and Bruges, made a fine display of good *Cattleyas*, *Cypripediums* and *Odontoglossums*. (Vote of thanks.)

Messrs. CYPHER & SONS, Cheltenham, were awarded a Silver Medal for a choice group.

Messrs. STUART LOW & Co., Mr. E. V. Low, Mr. W. SHACKLETON, The LIVERPOOL ORCHID & NURSERY Co., E. ASHWORTH, Esq., also exhibited, and received the thanks of the Committee.

BOLTON CHRYSANTHEMUM.

NOVEMBER 18, 19.—The 24th show of this society was held in the Albert Hall on these dates, the number and quality of the exhibits being well up to the average at this show, which is recognised as one of high merit in connection with groups of miscellaneous plants. This year there were five displays in the group class; the place of honour was gained by J. W. MAKANT, Esq. (gr. Mr. H. Shone), who filled a circle of 12 feet in diameter with a noteworthy collection; JOHN HARWOOD, Esq. (gr. Mr. W. Burgess), was a close 2nd.

The 1st prize for a group of Chrysanthemums arranged in half-circular form was won by Mr. W. BURGESS; W. G. HUGHES, Esq. (gr. Mr. H. Bishop), was awarded the 2nd prize.

The best group of large-flowering kinds was displayed by H. PARKE, Esq. (gr. Mr. H. Drinkwater).

The tables of Orchids were, as usual, highly attractive. J. MCCARTNEY, Esq. (gr. Mr. W. Holmes), was well to the fore with *Vanda coerulea*, *Cattleyas*, *Odontoglossums*, and other kinds. In addition to the 1st prize the Silver Medal of the R.H.S. was awarded to this collection. The best table of *Cypripediums* was also shown by Mr. MCCARTNEY, his plants giving evidence of good culture.

CUT BLOOMS.—For 24 varieties of Chrysanthemums, distinct, including 12 Japanese and 12 Incurved sorts, there was a strong competition. F. W. JAMESON, Esq. (gr. Mr. C. Jennings), was adjudged the 1st prize winner, his best blooms being (Incurved) *Romance*, *May*, and *Shields*, and (Japanese) *F. S. Vallis*, *Lady Talbot*, and *Mrs. A. T. Miller*; Mr. G. W. DRAKE secured the 2nd place, having perhaps the smartest stand of Incurveds shown in the neighbourhood this season.

The class for 36 Japanese blooms in not fewer than 24 varieties brought four competitors, all of whom staged well. The leading prize was won by A. JAMES, Esq. (gr. Mr. A. Chandler), with handsome blooms, his best being *F. S. Vallis*, *Lady Talbot*, Hon. Mrs. Lopes, W. Mease, and

J. H. Silsbury; the second prize was awarded to Mr. G. HAIGH, who had excellent blooms.

Mr. W. FOSTER had the best dinner-table plants, and Mr. MAKANT scored in the class for one Palm in a good *Phoenix rupicola*. Mr. R. CALDWELL proved the 1st prize winner in the class for three pots of single Chrysanthemums, and in that for three Japanese Chrysanthemums.

The best two bunches of black and the best two bunches of white Grapes were shown by E. LORD, Esq. (gr. Mr. J. Wright). Mr. JAMES BAILEY staged the best collection of eight varieties of vegetables.

ABERDEEN CHRYSANTHEMUM.

NOVEMBER 25, 26.—The annual show was held on the above dates in the Music Hall Buildings, Aberdeen. The entries showed an increase over last year, there being over 500 exhibits. Financially, too, the show was successful. Mr. M. H. Sinclair, the energetic secretary, carried out the arrangements in a most efficient manner.

CUT FLOWERS.—The display in this division reached a standard that has never before been attained at Aberdeen. In the class for 36 blooms (12 varieties), the Dowager Countess of SEAFIELD (gr. Mr. Alex. Morton) secured the 1st prize with a capital collection, comprising the varieties *Elsie Fulton*, *Algernon Davis*, *Francis Jolliffe*, *Mrs. L. Thorn*, *William Beadle*, *Mrs. A. T. Miller*, *Victoria* and *Albert*, *Lady Talbot*, *J. H. Silsbury*, *Purity*, *Mrs. G. Mileham*, and *Mrs. C. Penford*. The blooms of *Mrs. A. T. Miller* gained the highest number of marks. Mr. JAMES JENKINS, Clifton Road, Aberdeen, was placed 2nd with an exhibit little inferior to that from the Cullen House gardens. Only two points separated the competitors—106½ to 104½. The specimens of *F. S. Vallis* shown by Mr. JENKINS were unquestionably the finest blooms in the show.

Mr. WILLIAM PATTERSON, gardener, Minmore, Glenlivet, Banffshire, had a fine win in the class for 12 Japanese Chrysanthemums. Mr. JENKINS, Clifton Road, was placed 1st in the section for six vases, with a very good entry. Mr. JOHN A. GRIGOR, gardener, Seapark, Forres, carried off the 1st and 2nd honours for six Japanese Chrysanthemums, with blooms of exquisite colour and beautiful texture.

An outstanding feature in this division was the fine array of cut flowers of decorative and single Chrysanthemums. There was a large entry in this class, the leading honours for 18 varieties being won by Mr. J. A. GRIGOR, Seapark, Forres. Other exhibitors who were successful in this division were Mr. A. GRIGOR, Duff House, Banffshire, for 9 varieties; Mr. ROBERT BEGG, Garthdee, Aberdeenshire, for 12 varieties; and Mr. A. DUNCAN, Rubislaw Den House, Aberdeen, for six varieties.

POT PLANTS.—Exhibits in this section were numerous and of excellent quality. There were two entries in the class for a group of Chrysanthemums and other plants, arranged in semi-circular form, on a space 8 feet by 5 feet. The 1st prize was won by Mr. ROBERT BEGG, gardener, Garthdee, Aberdeenshire. The arrangement gave rise to some criticism, not a few considering the group much too crowded. In point of quality, however, the group was deserving of high praise. 2nd, Mr. JOHN MATHIESON, gardener, Craigielea, Aberdeenshire.

For six Chrysanthemum plants, in not fewer than four varieties, Mr. BEGG again showed in capital style, winning both the 1st and 2nd prizes. For four pot plants of single Chrysanthemums, Mr. A. MURRAY, Ashley House Gardens, Aberdeen, won the 1st prize easily, and he also excelled in the class for two pots of single Chrysanthemums, distinct. This exhibitor was also successful in the class for two pot plants of decorative Chrysanthemums, one each, disbudded and naturally-grown specimens. For four pot plants of decorative Chrysanthemums, the 1st prize was awarded to Mr. ALEXANDER DUNCAN, Rubislaw Den House Gardens, Aberdeen. The entries in the class for specimen Chrysanthemums, disbudded, any variety, made a fine show, nothing better having been seen at Aberdeen for many years past. Mr. COURTIS, Sunnybank Place, Aberdeen, won handsomely with *Soleil d'Octobre*. He was closely followed by Mr. BEGG.

Winter-flowering Begonias were well shown by Mr. WILLIAM DICK, Queen's Road, Aberdeen, and Mr. W. B. CORMACK, Dyce, Aberdeenshire.

FRUIT.—The principal prizes in the classes for Apples were won by Mr. CHARLES G. CUMMING, Pitgaveny, Elgin, and Mr. J. COURTIS, Rosefield, Elgin; whilst Mr. JAMES W. ROBERTSON, Letham Grange, Arbroath, took the leading honours for Pears. The best Grapes were shown by Mr. JOHN ELDER, Norwood, Culter, Aberdeenshire, and Mr. ROBERTSON, Letham Grange.

VEGETABLES formed a prominent feature of the show. For a collection of vegetables, six varieties (Tomatoes excluded), there were no fewer than eight entries. Messrs. J. & D. MCKENZIE, Lower Buxburn, by Aberdeen, staged a magnificent collection, and were worthily awarded the 1st prize. 2nd, Mr. HARPER, gardener, Tulliebelton, Perthshire. Mr. FERGUSON, Linton House, Sauchen, N.B., won no fewer than five 1st prizes in the Potato classes.

NON-COMPETITIVE EXHIBITS.

Chief among these was a display of Apples exhibited by the BRITISH COLUMBIAN GOVERNMENT.

Messrs. WILLIAM THOMSON & SONS, LTD., Tweed Nurseries, Clovenfords, staged a large number of Grapes. (Award of Merit.)

Messrs. W. WELLS & Co., Merstham, exhibited single Chrysanthemums. (Certificate of Merit.)

Messrs. G. BUNYARD & Co., LTD., Maidstone, exhibited a collection of Apples. (Award of Merit.)

Mr. ANDREW REID, Durris House, was awarded a Certificate of Merit for Citrons grown at Durris House Gardens.

NATIONAL CHRYSANTHEMUM.

(ANNUAL DINNER.)

NOVEMBER 29.—The annual gathering at dinner of members and friends of this Society took place on Tuesday last at the Holborn Restaurant. The President, Sir Albert Rollit, occupied the chair, and amongst others present were Messrs. Thos. Bevan, E. F. Hawes, C. Harman Payne, D. B. Crane, C. H. Curtis, R. F. Felton, W. Higgs, W. Wells, W. Howe, H. J. Jones, D. Ingamells, N. Davis, J. H. Witty, E. F. Such, J. T. Simpson, F. W. Ladds, William Collins, Thos. Stevenson, and G. L. Caselton. The company of about 100 included many lady members and friends. The tables were decorated with Chrysanthemums by Mr. R. F. Felton. The proceedings were marked with great enthusiasm, forming a pleasant termination to a successful year. Everything, including a better financial condition, augurs well for the future prosperity of the Society; the recent show was referred to by more than one speaker as one of the most successful ever held.

After the usual loyal toasts had been observed, the vice-chairman, Mr. E. F. Hawes, proposed the "Donors of Special Prizes." Mr. Hawes thanked all those who had contributed in this manner, and stated that the success of the show was in no small measure due to their liberality. Mr. J. H. Witty replied, and the President then presented the various trophies and medals. One of the most interesting presentations was a Special Medal awarded to Mr. W. Higgs, in recognition of having won the Holmes Memorial Cup for 36 Incurved blooms, 12 times in succession. Amongst the principal prizes, Mr. Stevenson received the President's cup and the Holmes' Memorial Cup for 48 blooms of Japanese varieties, Mr. W. Mease the Holmes Memorial Cup for 36 Incurved blooms, Messrs. Butler Bros. the Dean Memorial Gold Medal, and Mr. Norman Davis the cup offered by Mr. Shea and the gold medal presented by Messrs. Clay & Son for the best non-competitive exhibit at the November show.

The principal toast, "The National Chrysanthemum Society," was given by the President. Referring to the history of the N.C.S., Sir Albert Rollit said it had not only a brilliant past but the prospects of a brighter future. As president, he took great pride in the Society, and he felt it a great honour to officiate in that capacity for so long. During his office as Mayor of Hull, he inaugurated the first Chrysanthemum show in the North. He had known the National Chrysanthemum Society for a long time, had seen the exhibitions at the old Aquarium as well as at the Crystal Palace, and, although there had been periods of vicissitude, he had always been impressed with the zeal

of those who were responsible for the management. Sir Albert Rollit said the Chrysanthemum was a glorious flower; it typified the land of the Rising Sun; in beauty of form it was difficult to match; whilst in splendour of colours it had no equal in flowers. The Chrysanthemum was the consolation of the dreariest month of the year. The speaker said he had noticed a great advance in the decorative side of the flower, and in this respect he could point to no better example than the display around him. He had never seen so perfect a show of Chrysanthemums as the Society's autumn show at the Crystal Palace, and his opinion was shared by experts. Shows, said Sir Albert Rollit, are useful in marking progress, and they have a wider significance in educating the citizen to appreciate the beautiful. The cultivation of flowers for exhibitions teaches patience, is a healthy recreation, and flowers have a refining influence. The speaker also pointed to the good-fellowship which results from international shows. He had visited, with other officials of the N.C.S., the recent show of the National Horticultural Society of France. The visit resulted in knowledge gained, and knowledge is the basis of business. Sir Albert Rollit said, as a member of the Executive Committee, he extended to the members of the French Society a welcome to the international exhibition of 1912. After referring to the approaching conference at Essex Hall, and the work of the committee, Sir Albert Rollit put the toast, which was accepted with enthusiasm.

Mr. Thomas Bevan replied. He was glad to know Sir Albert Rollit intended to stick to the Society, and the committee felt encouraged by this knowledge. Referring to the autumn show, Mr. Bevan said it was surprisingly fine, and only lacked the large plants of the Aquarium days. At the recent show in Paris, the trained plants were an "eye-opener" to English visitors. Some were trained in square pyramids with 400 to 500 blooms, and the training was marvellous, for each flower seemed set in its place as though it were made to fit. Other plants were grafted, and displayed blooms of several colours; some were worked on the Marguerite stock, with stems as thick as one's wrist. In Brussels also he observed many fine plants, but the "finish" was not comparable to those seen in France.

The toast of "The President" was given by Mr. J. T. Simpson, and received with musical honours. Mr. Simpson pointed to the part taken by Sir Albert Rollit in literature, science, commerce, law, politics, and horticulture. He was assured they had the right man in the right place. Other toasts included the exhibitors and affiliated societies, proposed by Mr. C. Harman Payne, and responded to by Mr. F. W. Ladds, "The Ladies and Visitors," by Mr. D. B. Crane, with response by Mr. W. Collins, and "The Press," given by Mr. H. J. Jones and replied to by Mr. C. H. Curtis.

NEW INVENTIONS.

PACKING FLOWERS FOR TRANSIT.

WITH reference to our reply to *T. H. K.* in the Answers to Correspondents column, p. 291, Messrs. William Jowett, Ltd., Cataract Bridge Mills, Mellor, near Marple Bridge, send us a sample of their tissue-wadding specially made for the purpose. The wadding is coated on either side with tissue paper, so that there is no danger of the material adhering to the flowers as is often the case when ordinary wadding is employed.

A NEW BULB PLANTER.

THE drawing reproduced in fig. 175 represents a new bulb planter which I have found to be the best of the various implements used for this purpose. It consists mainly of two parts: a brass tube (A) and the handle with cross-piece attached (B). Inside the metal tube is a wooden plunger which moves up and down, this being connected with the lever (C), by which the depth of planting can be regulated, a scale of inches being marked on the side of the slot where the lever works. The arm (D) is a fixture. By placing the foot on this, the metal tube is forced into the soil, which pushes up the lever C with the wooden plunger until the desired depth is reached; the tube is then withdrawn from the hole and the bulb inserted. A slight pressure of the foot on lever C will push back the displaced soil into the hole,

and the operation of planting is completed. The implement can be worked very easily and quickly, and the bulbs thus planted thrive well. The planter is the invention of Mr. Ashby, of Syston Hall Gardens, Grantham, who has taken out patent rights for his invention. *W. H. Divers, Belvoir Castle Gardens, Grantham.*

LAW NOTE.

SALE OF POISONOUS COMPOUNDS.

AT the Winchester County Court, on November 16, before his Honour Judge Gye, the Pharmaceutical Society of Great Britain sued Mr. C. W. Breadmore, seedsman and florist, of Winchester, claiming a penalty of £5 for an alleged infringement of the Pharmacy Act of 1868.

Mr. Jackson, for the Pharmaceutical Society, said that Mr. George Waldo, a pensioned detective of Scotland Yard, paid a visit to Winchester on July 13, and called at defendant's shop in the High Street. He bought a pair of gardening gloves and a bottle of XL-All insecticide. He

witness's possession until the contents were handed over for analysis on November 7.

Cross-examined as to the penalties going to the society, witness said that when the society was successful the Treasury allowed them to retain the penalties. He denied that the society got any benefit; on the contrary, it cost the society £500 a year to protect the public in carrying out the Act.

His Honour asked witness to examine the bottle, and asked if he could find any mark as of another label having been on it.—Witness said he failed to see such a mark.

Mr. Snelling, in addressing the Court for the defence, said he need not trouble himself very much in speaking of the method in which the prosecution had been conducted. He thought it must have formed a great impression on his Honour's mind. He contended that it was perfectly obvious that the objects of the prosecution, although the witnesses for the plaintiff put it the other way, were in the interests of the members of the Pharmaceutical Society as opposed to the seedsmen and florists who were authorised by the Act of 1908 to sell those preparations which they were formerly not allowed to sell. And the Pharmaceutical Society, rightly or wrongly, were going round the country doing everything they could to catch respectable tradesmen on technical offences in the pursuit of their business, and for which they held licences.

An employé named Newton, who is still in the employ of Mr. Breadmore, stated that he checked the goods by the invoice when they were received in May, 1909. Witness on that occasion labelled each bottle himself; there were only six pint bottles, and it was absolutely impossible to miss one, because they were all labelled before being passed into stock.

Head constable Sim, inspector under the Poisons and Pharmacy Act of 1908, stated that, on three occasions, he had paid surprise visits to Mr. Breadmore's premises since October, 1909, in order to see that the proper obligations of the Act were carried out. The particular nature of his examination was to ascertain that poisons were suitably stored, and were not in contact with foods. He had examined the bottles and tins, but had not discovered one without a label.

His Honour, in giving judgment, said this was a most unsatisfactory case, because he had to determine upon evidence which was also extremely unsatisfactory. In the first place, the witness who bought the stuff went in such a manner that could not, he thought, be intended otherwise than as a blind, to make the assistant believe that it was wanted for ordinary agricultural purposes. The purchaser then had to sign the poisons book, and it was obligatory upon the vendor to obtain the purchaser's signature in that book. The purpose of this was perfectly clear, in order that the buyer could be traced should it become necessary. Yet they had there the Pharmaceutical Society, who came there for the protection of the public, through their agent, doing that one thing which of all others was calculated to defeat the ends of justice, and to defeat the tracing of that particular bottle of stuff. He must say they did not come to Court with very clean hands. In order to prove that an offence had been committed against the public, they then, in his (the Judge's) opinion, committed a still greater offence against the public by not only allowing their agent—because the society must be taken to have allowed him to act in this matter—to do as he had done. They expressly directed him to buy the poison, although he did not know what they did with regard to keeping his name and address secret. When he was directed to go and buy the poison as their agent, the least that Waldo could do, his Honour thought, was to observe closely all the requirements of the Act and of the Privy Council regulations. Whatever the society might have done, Waldo did not do so, because he did that which was calculated to defeat those provisions. He must say for a public body like the Pharmaceutical Society to permit one of its servants to do this, and then to bring it into Court and let him state it, was an act which he would rather not characterise by saying what he thought of it. But these were details which did not affect the result of that case; all he had to determine was whether he was satisfied that this particular bottle of poison was sold by the defendant without a label. After reviewing the evidence of the salesman, he said it was evident that he made it a regular practice of looking at

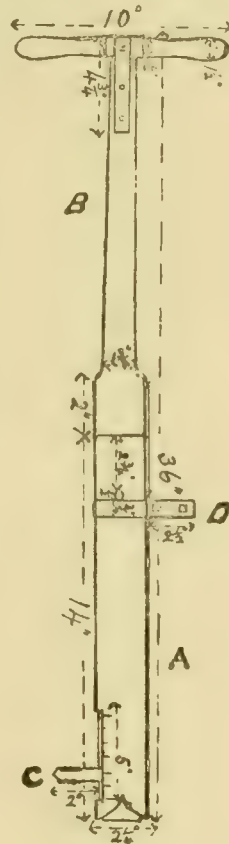


FIG. 175.—A NEW IMPLEMENT FOR BULB PLANTING.

requested a bill, and when asked for his name and address, gave that of "G. Wilson, Shawford," and he signed the poisons book in that name.

The Judge: "What are your instructions about signing the poisons book?"—Witness: "I received no instructions as to signing."

"Well, you know the statute requires that a purchaser shall sign his name in the poisons book, and you didn't do it?"—"I was not aware that the statute required it."

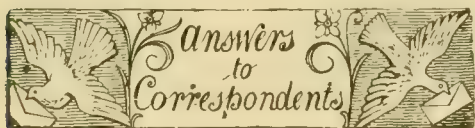
His Honour: "Do you live at Shawford?"—Witness: "No, sir."

"Then, if they wanted to trace you, they would have no means whatever of doing so. If any person or public office, like the Board of Trade, wanted to trace you, they wouldn't be able to do so?"—"I am not known at Shawford."

Mr. Snelling: "So you may have committed an offence under the Act yourself?"

Mr. Harry Moon, the official in charge of the law department of the society, stated that he received the bottle on July 16. The bottle did not bear Mr. Breadmore's name, and was in

all these labels, and he swore positively that this one was labelled. He had described what he did, and had not been contradicted. He could not help thinking that, in some way or another, the witness Waldo had made a mistake, or that the label had come off the bottle as he was unwrapping it. It was absolutely vital to the case, so far as the vender was concerned, that there must have been a label on the bottle, and, having regard to the great care taken by the defendant in respect to the labelling of these things, the evidence of the assistant who went over the stock a year before, and the confirming, although not conclusive, evidence of the head-constable, and having regard to the fact that the sale of poisons without the label involved that penalty, he had come to the conclusion that there had been a mistake made on the part of the plaintiffs, and he found, as a fact, upon the evidence, that he was not satisfied that this bottle was sold without the label. Anything more lax and unbusinesslike on the part of a public authority he had never heard, and when a public authority was established for the purpose of carrying out the requirements of an Act of Parliament, it ought to be done in a proper manner. Officials who had such power placed in their hands ought to do nothing with a view to catching every penalty they could get in prosecuting such cases for the mere sake of bringing an action and recovering the penalty. There should be a bona-fide exercise of their powers, and a bona-fide effort to protect the public. He said this after due reflection. His Honour proceeded to call attention to the fact that there was an alternative procedure under the Act before the Justices, under which the Justices had the option of inflicting a graduated penalty as they thought fit. But, in this case, he (the Judge) had no option whatever, and he was compelled, if he found the case proved, to give judgment for £5. Whether that were a factor in inducing the society to bring the action there instead of before the magistrates, he could not say, but it had a very awkward appearance. The result of the case was that the plaintiffs, in his view, had failed to prove the case, and there must be judgment for the defendant, with costs upon the highest, or C scale, his Honour concluding with the remark that it was not becoming to his mind that a public body should permit their agent to do what was really fraud.



ACETYLENE GAS REFUSE AS A MANURE: *Gardener, Breconshire.* In vol. xlv. there are numerous references as to the value of this material for garden purposes, including the results of experiments carried out by Mr. W. B. Burgess, of the South-Eastern Agricultural College, Wye, which formed the subject of a leading article in the issue for April 24, 1909, p. 264.

AJUGA ON LAWN: *A. G.* The plant you are troubled with is doubtless Ajuga reptans, the Creeping Bugle, which grows in huge patches and is most difficult to eradicate. Apply at once a mixture of three parts sulphate of ammonia and one part sulphate of iron at the rate of 2 ounces to the square yard. In early spring give a dressing of soot mixed with some dry, sifted fowl-manure. Another good plan to get rid of this plant is to give a liberal watering with gas-liquid to be obtained from the gasworks, which must be well diluted with common water. This can be applied twice or three times from winter to early spring.

BEGONIA UNHEALTHY: *H. Tullett, Durham.* There is no fungus or insect present on the plant. The "browning" apparent on the veins on the under surface of the leaf is not due to "rust" or to any fungus. Afford drier conditions and ventilate the house when occasions permit.

BOOKS: *F. S.* The work by Mr. Elwes and Dr. Henry on *The Trees of Great Britain and Ireland* consists of six volumes. Five have been issued, and the sixth is still in the press. The net price for the six volumes is £21, carriage extra.

BRUSSELS SPROUTS: *E. K. T.* The stem of the plant is infested with the common white spring-tail, *Lipuria ambulans*. As a means of prevention we would recommend that the soil be ridged roughly so that it may be exposed thoroughly to the action of frost. Give the land a good dressing of lime, or lime and soot, and, if it needs manure, apply an artificial fertiliser.

CARNATIONS DISEASED: *G. F. R.* The disease-like spots on the leaves of the plant of *Souvenir de la Malmaison* Carnation are not due to the attacks of any fungus or insect pest. They suggest injury due to watering with something harmful, or to some other adverse cultural conditions.

COLEUS THYRSOIDES DISEASED: *R. W.* The injury has been caused by fungus *Cladosporium epiphytum*. This disease usually appears when too much moisture is present. Admit more fresh air to the plant house and sponge the foliage with a rose-red solution of permanganate of potash.

DENDROBIUM: *J. G. D., Lochgilphead.* The insect attacking the *Dendrobium* is a Scolytid beetle, probably introduced from some foreign country. The beetle is breeding in the pseudo-bulbs. All infected stems should be cut off and burned. There is no need to treat the soil, as the beetle is confined in all its stages to the pseudo-bulbs.

FRENCH BEANS: *H. T. S.* The cultivation of French Beans should not be attempted so late in the season unless you can maintain a temperature of 60° at night and 70° by day. This is not a remunerative crop in winter under any circumstances, and should only be practised where an occasional dish is desired. The cause of your failure seems to be low temperatures, aggravated probably by unsuitable soil. If you desire to cultivate French Beans under glass, you should clear out your plants and sow seeds again at about the middle of January, but you must first satisfy yourself that you can maintain the necessary heat.

"FUNGUS" ON A LAWN: *G. Claridge.* The specimen from a lawn is a Lichen (*Peltigera*). To destroy lichens and moss in grass, rake out (during winter) as much as possible, then apply "steam bone flour" at the rate of 1 lb. to 7 square yards, and rake over again. In spring, apply sulphate of ammonia at the rate of 1 lb. to 20 square yards, giving this dressing in wet weather. Such manuring will cause the grass to grow strongly, and starve out the lichen and moss.

GARDENER AS "MALE SERVANT": *W. J. W., Ltd.* See reply to *H. L.* in the issue for October 22, p. 308. Also *Gard. Chron.*, August 13, p. 130.

GRAPES FAILING TO COLOUR: *H. P. C.* You cannot reasonably expect your Grapes to colour after this date. The variety *Gros Colman* requires either a house to itself, or it should be planted in the warmest part of a house where other varieties are grown. It is a mistake to plant *Gros Colman* between other varieties—it invariably fails to colour when grown in this manner. The variety requires more artificial heat than other late Grapes. If your plants of *Gros Colman* are intermixed with other kinds you should replace them by encouraging young canes from the vines next to them, choosing the most convenient growths from points as near to the base as possible. This is frequently done with success.

LARCH: *E. Cross.* Larch will succeed well amongst old standard Oak trees, and should be planted about 6 feet apart, stout, well-rooted plants about 4 feet high being used. The shelter afforded by the Oaks allows of thinner planting and larger plants being used than is usually the case. For purely economic purposes the common Larch is to be preferred to the Japanese.

LIME TREES: *R. J.* The trees have been infested with one of the slime fungi. Thoroughly drench the trunks with a solution of copper sulphate (bluestone) at the rate of 1 lb. in 25 gallons of water. The soil around the trunk of the tree should also be treated with this specific. This must be done during the winter, before the leaf-buds begin to swell.

MANURES FOR POTATO CROP: *Hollywood.* Salt is not to be recommended for Potatoes as it tends to make the tubers soapy when cooked. The reason being that the chloride of the salt tends to retard the conversion of the sugary juice of the tubers into starch. A useful manure for Potatoes on fairly good land would be 12 cwt. of farmyard dung per acre, 3 cwt. of superphosphate, $\frac{1}{2}$ cwt. of sulphate of potash, $2\frac{1}{2}$ cwt. of quicklime, and 20 bushels of soot. If the land is heavy, mix together and sow broadcast in January or February the superphosphate, potash and lime, then apply the dung, plough the land and leave it until planting time. Sow the soot in the opened ridges and bout in with the seed. If the land is light and sandy apply all the manures at the time of planting. If a heavy crop is required, apply, after the young plants are well through the ground, $\frac{3}{4}$ cwt. of nitrate of soda or of sulphate of ammonia per acre.

NAMES OF FRUITS: *J. B. B. W.* 1 and 2, Bishop's Thumb.—*P. H. E.* 1, Bramley's Seedling; 2, Roundway Magnum Bonum; 3, Graham; 4, Tower of Glamis; 5, not recognised; 6, Sturmer; 7, Scarlet Pearmain; 8, Golden Pearmain.—*A. W.* Pear Beurré Diel.—*Essex.* Apple Scarlet Golden Pippin.

NAME OF PLANTS: *J. M. B.* 1, *Podocarpus chilina*; 2, *Ligustrum lucidum*; 3, *Cupressus Lawsoniana*.—*E. K. S.* Send the variety of *Chrysanthemum* to some grower who has means of comparing it with varieties already well known.—*D. I.* *Vancoveria hexandra* (The Barrenwort).—*Tunnicliffe.* *Maxillaria picta*.—*Morton.* 1, *Lastrea varia*; 2, *Onychium japonicum*; 3, *Pteris geraniifolia*; 4, *Davallia parvula*.

PEACH TREE DYING: *J. Taylor, Dartford.* It is impossible to say, from the piece of wood sent, what is causing the injury to the Peach tree. Possibly the fungus *Eutypella prunastri* has attacked it. All diseased wood (showing brown stain) should be cut out, and surface of wound painted over with Stockholm tar.

POTASSIUM CYANIDE AS A FUMIGANT: *J. D.* If you refer to the issue for April 23, 1904, you will find a detailed account of the methods of fumigating with cyanide of potassium, including the proper proportions of the chemicals, and the quantity to use per 1,000 cubic feet contents.

TRAVELLER FOR SEED AND BULB FIRMS: *H. R. S.* Travellers are usually appointed from among men who have had experience in nursery work and management, but occasionally such positions are filled by private gardeners. If you wish to become a traveller, you should write to some of the leading nurserymen, offering them your services; they will probably tell you that it is necessary for you to spend some time in the nursery before taking up the duties you wish to carry out. If you fail to get an appointment in this way, you might still be successful by means of advertisement.

WALLFLOWER: *E. R. Finlayson.* The warty swellings on the stem of the Wallflower have been caused by the attack of the Downy Mildew (*Peronospora parasitica*). This can still be observed as a whitish "mould" on the surface of the swellings. To prevent the mildew spreading, spray the plants with the Bordeaux mixture (4 lbs. bluestone (copper sulphate), 4 lbs. quicklime, 50 gallons water).

WEEDS ON LAWN: *J. P.* Lawn sand is a useful manure for getting rid of obnoxious weeds from a lawn. The quantity to be used will be given in the directions printed on the purchased tin. If the plantains are very large, the only method for their eradication is to dig them up. We can also recommend a dressing of sulphate of ammonia at the rate of 2 ounces per square yard mixed with a little sand to ensure its more even distribution. This should be sown during the winter, then in early spring apply a good dressing of soot.

Communications Received.—*J. O'B.—G. C.—C. H. C.* *J. F.—R. P.,* Littlehampton—*H. S. T.—C. T. D.—W. S. B.—A. C. B.—J. D. F. M.—A. H.—Dr. P. B.—E. M.—W. J. J. C. E.—H. S. W.—S. A.—W. C. Midlothian—W. G. S.—A. L.,* Bavaria—*C. F. K.,* Potsdam—*A. H.—A. D. S.—A. J.—G. A. B.—J. L. G. H.—R. P. B.—H. C. Oldham—E. H. J.—H. N. S.,* Bristol—*W. McC.* (Next week: thanks for is. for the Royal Gardeners' Orphan Fund)—*S. & Co.—H. G. G.—J. O.*



Photographs by H. N. Kenz

EAST BURNHAM PARK, THE RESIDENCE OF MR. HARRY J. VEITCH.

THE

Gardeners' Chronicle

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“ADAM'S LUXURY AND EVE'S COOKERY.”

THE sub-title of this old garden book is “The Kitchen Garden Display'd in Two Parts,” and, after other remarks, it proceeds, “Designed for all who would live Cheap, and preserve their Health to old Age, particularly for Farmers and Tradesmen in the Country, who have but small Pieces of Garden Ground, and are willing to make the most of it. London: Printed for R. Dodsley in Pall Mall; and sold by M. Cooper at The Globe in Paternoster Row, 1744.” A second edition appeared in 1756. There is no author's name to this small volume with the taking title of which it would be rash to insinuate that it fails to discourse of things which would have been luxuries to Adam, or that its recipes are equal to anything in the household book of his wife. But one cannot help thinking it is an instance such as *The Grub Street Journal* of a few years earlier draws attention to, especially in the matter of titles. “The composing of them is fallen into the Hands of Booksellers—even Authors themselves are scarce fit to be trusted with so delicate a Province,” and the government of the day was entreated to step in to see that “due names and titles [were given] to all writings which come from the Press that Readers may not be impos'd on with *quid pro quo's*, Chaff for Grain.” The sub-title probably had a meaning, *The Flower Garden Display'd* and *The Fruit Garden Display'd* having been published only a few

years previously. The price of the volume was one shilling, and it is now a rather scarce book.

Part I. succeeds a short Introduction and contains The Products of the Kitchen Garden and a brief Calendar of 20 pages. Part II. contains a “Collection of Receipts for dressing all Sorts of Kitchen-Stuff,” &c., &c., and the “Physical Virtues of Every Herb and Root.” The two parts are of about equal length, and, like every book, however mean or uninviting it may appear, it contains a good deal which is not to be found elsewhere. Asparagus has three kinds of culture described. Under “Broccoli” it is said “that Sort called the Roman and by some the Blue Broccoli is the best.” About Christmas or little after they will produce little Heads in shape like a small Cillyflower, which is to be cut off and eaten, and afterwards is succeeded by a great number of side Shoots,” which, it need hardly be remarked, also contributed to the luxuries of the table. Cabbages, of which Portenact was the earliest, succeeded by the Battersea, were not ready to cut till May. Cauliflowers were cultivated with great care and with the expenditure of much labour, some of the details reminding us of French culture. They were planted for early cutting on dung-heated soil, three plants under one glass. Two were removed in February and replanted for a succession. The plants from a later autumn sowing were grown in the open but protected, and when transplanted, Radishes, Lettuces and Spinach were sown among them. In February, more seeds were sown, this time on a hotbed, and “about the tenth of May yet more from which heads were produced about Christmas.” The Cucumber and Kidney Bean were other important crops, and also Lettuces. Of the Melon this interesting remark is made: “To enumerate all the different Sorts would be not only endless, but impossible, there being annually new sorts brought from abroad.” Mushrooms, too, were grown extensively. It is noted of Peas that “some People are at great Expence to produce Pease in April or sooner,” and one is almost astonished to discover that the Potato was already a subject for controversy, our Author preferring large tubers cut into pieces for seed rather than small uncut tubers, which many esteemed the better. The supply of Potatoes gave out in March or a little later. As an illustration of the changes which inevitably occur even in domestic affairs, it is interesting to note how Tansy was not only largely cultivated in the garden but forced in frames from December onwards.

The directions in the Calendar are extremely terse, and what is noted concerning the physical properties of Radishes may serve to illustrate that portion. These, it is affirmed, “are detersive and cutting; if eaten to excess they make People lean, create Vapours, and cause Pains in the Head.”

Though the portion in which Eve is catered for lies outside gardening, there are a few things which may be mentioned as being not without interest. Obviously it is written by another hand belonging to a person of inferior education to him who was responsible for the first part. Thus “An Amulet of Green Beans” is discovered to be not a charm but an Omelette. The “Receipts to dress Potatoes” exhibit in a curious manner the changes that have taken place in cooking this

vegetable. Who, now, would dream of stewing Potatoes “with Salt, Pepper, and Ale,” or to “bake them with Herrings, mixed with Layers of Pepper, Vinegar, Salt, Sweet Herbs and Water.” How the liquids are to be stratified wants explanation! “An excellent Pudding to put in the Bellies of Rabbits, Hare, Fish, &c., when roasted” is “to mash boiled Potatoes very fine; then take sweet Herbs, dried and beaten small, with spice, Butter, and Salt mixed all together.” There are a great many more receipts, and the following will serve to show the sublimer uses to which the tuber may be put. It is a “Potato Pye.” Boil Potatoes (not too much), cut them in slices as thick as your Thumb, season them with Nutmeg, Cinnamon, Ginger and Sugar; your Paste being ready, put them in upon the Bottom; add to them the Marrow of two or three Bones seasoned with Orange-Juice, Orange-flower water, beaten spices and Rose-water, a handful of stoved Raisins of the Sun, Dates, Mango, Citron, with Eringo Roots sliced; put Butter over it and bake them. Let their Layer be a little Vinegar, Sack and Sugar, beaten up with the Yolk of an Egg, and a little drawn Butter; when your Pye is enough, pour it in, shake it together, scrape over Sugar, garnish it and serve it up.” After which the Pye was probably eaten. “The Art of Keeping all Sorts of Fruit,” including Strawberries and Raspberries, enables us to compare present-day methods with those of 160 years ago, and it is apparent that the same principles were pursued, though the outfits were less perfect. R. P. Brotherston.

THE MARKET FRUIT GARDEN.

AN “IMPOSSIBLE” NOVEMBER.

THERE has seldom been a November more unfavourable to the planting of fruit trees and bushes than the month just ended, at least, in my own district. We had rain on 14 days up to the 29th amounting to 5.66 inches, and so spread over the month that the land was constantly in a very wet condition, except when it was hard with frost. From 2° to 9° of frost were registered on 15 occasions, even close to the south coast, whilst further north, as much as 12° was reported. The measurements were those made on the screen, and 20° of frost occurred on one occasion on the ground level, as reported by the Meteorological Office for some district not named. Consequently, even when the soil was not too wet for planting, it was usually hard from frost for fully half a day at a time, and when it had been thawed it was in a sticky mess. So far, then, the weather of the planting season has been worse even than it was last year.

FEATHERED TREES.

In connection with fruit-planting, a few remarks upon the abomination of producing untopped, feathered trees are seasonable. The slovenly fashion of leaving both Apples and Plums untrimmed until they are two years old has become very prevalent. It is cheap, no doubt, and nurserymen, by adopting it, are able to sell trees at very low prices, grown, as they are, in a crowded state and without the labour of trimming. For tall standards, the fashion is not detrimental, because all the strong growth, as a rule, is made at the top of a lanky, feathered tree, where it is wanted. But for half standards or bushes, an untopped, feathered tree is very bad indeed, for the same reason which renders it suitable for a tall standard. I say an untopped tree because to leave the side shoots, except any of gross growth, on the stems until the

second season is desirable for increasing the substance of the stems. What is objectionable for half-standards or bushes is a lanky, feathered tree, which has no substantial shoots lower than 5 feet or 6 feet from the ground, and sometimes no dormant buds from which substantial shoots will develop.

It is chiefly to trees intended to be trained as half-standards or as bushes on stems about 3 feet high that my objection applies. Bushes which branch out from close to the ground can be obtained by those who order them specially. These, of course, were topped when maidens. No doubt, too, partially-trained half-standards may also be obtained; but if a grower simply orders two-year-old Apple or Plum trees, he will almost certainly get untopped, feathered trees, mostly lanky. The case with Plums is even worse than it is with Apples, because the latter almost invariably have some dormant buds below the strong shoots at the tops, which latter can be cut off. This is a sacrifice, comparing such trees with those which have strong side shoots requiring only shortening at a moderate distance from the bases. But with Plums, which are so lanky that the only strong side shoots are 5 feet to 6 feet from the ground, with nothing but "feathers" below this level, it is most difficult to form a fruitful tree; for it is doubtful whether any of the "feathered" branches will develop into strong shoots, as they are really nothing more than spurs, or, rather, feeble and short shoots, which will develop into fruit-spurs or die off.

Fortunately, I have raised nearly all the trees I have required for planting, and these have all been topped as maidens at the height at which I desire them to branch out. Consequently they have been partially formed when two years old. Last season and, again, this year a few hundreds of trees were needed to complete plantings, and those obtained were mostly lanky trees, from which the only strong shoots had to be cut off, in the hope of inducing proper growths at the desired height from the ground. Among some Plum trees lately received many are quite devoid of latent buds below the strong side-shoots 6 feet from the ground, every bud having started an incipient spur. The tops have been cut off, but there is much doubt in my mind as to whether any of the feeble "feathers" will develop into branches. The nurseryman who supplied the trees was asked why he had not topped them as maidens at a proper height for half-standards, seeing that for one tall standard it is probable that a hundred half-standards are demanded. The reply was that if he topped his maidens he should never sell his trees. If this is the case, it is growers, rather than nurserymen, who are to blame for the growth of the fashion of raising untopped, feathered trees.

THE PRUNING SEASON.

The weather of November was as unpleasant for autumn pruning as it was for planting. It was cold work, and trampling around trees when the soil was like an ooze reduced it to mud, disagreeable for the operator and bad for the condition of the land. When frost prevailed, the latter objection did not apply, but there is some misgiving as to the policy of pruning when the cut surfaces will be immediately subjected to a freezing temperature. Experiments at Woburn appear to indicate that no harm results from pruning in frosty weather. This may be the case with Apples, to which the trials, if my memory serves, were limited; but I doubt whether it is true of Plums, because I have noticed that the bud next below a cut in a Plum tree frequently dies off, so that the shoot emerges from the next bud lower down, usually pointing in the wrong direction. This may be the result of frost.

It is a commonplace truth that pruning cannot be learnt by means of general rules. To prune properly, the habits and vigour of growth of the several varieties must be studied. The only general rules which apply in all cases are those which direct the pruner to

cut just above a bud pointing in the direction in which he wishes a branch to extend, and to keep the interior parts of every tree open to sun and air. Most varieties of Apples require spur-ring, but some make such a profusion of natural spurs that interior laterals at least, if not required for extension to fill spaces, are best cut out entirely. As to pruning for the direction of branch extension, the treatments desirable differ widely. The common direction to cut just above a bud pointing outwards should not be followed indiscriminately, as it often happens that extension is needed inwards to fill an undesirably large empty space, while, in other cases, extension of low branches outwards would cause growth which would be injured by horse cultivators or the harness. A few varieties, moreover, like the Lane's Prince Albert Apple and the Victoria Plum, require to be cut for the most part just above buds pointing upwards. Trees of an upright habit of growth, on the other hand, such as Golden Spire and Duchess of Oldenberg, need cutting back severely in the early years of their life to out-pointing buds, they require also much interior thinning. Warner's King has a tendency to make long and stout branches too thinly disposed, and, therefore must be cut back severely in its early years; while Bramley's Seedling needs less severity. Worcester Pearmain calls for little beyond the thinning of its super-abundant inside laterals, as it is naturally short-jointed. Lord Grosvenor is a variety requiring somewhat severe pruning until it has become well furnished with branches, as its habit of fruiting prematurely all along its growths checks the formation of side shoots. Allington Pippin is a troublesome variety to train, although it shapes itself admirably, because a formation of laterals is profuse, and more thinning out than spur-ring is desirable in its case. Domino is an example of varieties which do best with little or no spur-ring, as it forms natural spurs in almost too great abundance.

With respect to Plums, the case of Victoria has been already mentioned. Its sustained vigour of wood-formation and its pendulous habit of growth render necessary pruning annually for years after contemporary varieties have ceased to need anything beyond the cutting out of superfluous, interior shoots. Pond's Seedling tends to make irregular and lanky growth, some of its branches being disproportionately vigorous and requiring severe cutting back. Of all Plums with which I am acquainted, it is the most difficult Plum to bring into symmetrical shape. Monarch shapes itself so admirably that the temptation is to leave it without any considerable pruning. This temptation, however, should be resisted in the early years of the growth of the variety, cutting back with some severity being necessary to induce the production of more sturdy branches than it is the natural habit of this Plum to grow. Later on, it may be left alone almost entirely. The bushy habit of growth of Rivers's Early Prolific points to the need of thinning rather than any other attention after the first two or three years. Czar shapes itself nearly as well as Monarch, but is a much more vigorous grower in my soil, and needs less severe pruning in its early life.

CHARLES ROSS APPLE.

At the Hexham Conference, Mr. Bunyard condemned in unqualified terms this Apple as a market variety, declaring that it was useful only as an exhibition fruit. Certainly, it is very slow in coming into bearing, and when it begins to fruit it produces only a small number of large and beautiful specimens. The case of the mother to the trees I have raised, however, which was obtained when Charles Ross was first sent out, leads to the hope that the variety will do well hereafter. This year, the original tree bore a good crop of Apples of suitable dessert size. In flavour it is vastly superior to its half-brother, Allington Pippin, and in beauty it has hardly a superior. *A Southern Grower.*

TREES AND SHRUBS.

BAMBOOS IN THE SOUTH-WEST.

BAMBOOS are practically hardy, far harder than was imagined on their first introduction to our islands, and, where adequate shelter is provided, will withstand severe frost without injury. Shelter is, however, absolutely necessary, for a windswept site is fatal to the beauty of the Bamboo, which has a miserable appearance where it is exposed to the full force of biting gales that are far more injurious than the severest frosts. No plant is dowered with such delicate grace of form as the Bamboo, and though some species far excel others in elegance, none of the family is destitute of decorative value. Some species, such as *Arundinaria nobilis* and *A. Falconeri*, generally lose the majority of their leaves in the winter, but in exceptionally sheltered spots, such as Penjer-rick, near Falmouth, *A. nobilis* retains its foliage, and a few years ago was to be seen over 25 feet in height in full beauty in the month of March, when the rooks were building in the leafless Elms in the background. Lately, however, these giant Bamboos have seeded and died. At Menabilly, *A. nobilis* has been even finer, specimens 28 feet in height being on view four years ago, but these have since then, unfortunately, seeded and died. In some years, Bamboos commence their growth very early in the season, and at the end of March pointed shoots may be seen pushing up from the ground to a height of 6 inches or more. When in vigorous growth, the shoots of Bamboos lengthen at a surprising rate, and in a certain Cornish garden a shoot of *Phyllostachys Quiloi* was found to have grown 14 inches between Saturday afternoon and Monday morning. This Bamboo is one of the latest to make growth, often not pushing up its strong shoots until the month of September, these generally being ruined by the frost before they have had time to harden, except in very sheltered and warm nooks. The flowering of Bamboos is a great drawback to their culture, for, if they flower on every culm, the plant almost invariably dies, and where many in a large collection perish they create unsightly gaps. *A. Simonii* is the most given to flower of all the species, and may generally be seen in bloom in over a dozen places. Where it only flowers on a few culms it generally lives, but if it blooms on all it is almost certain to die. It has been asserted that when a Bamboo flowers, every individual plant of the same species also blooms, but this is evidently an incorrect assumption, as plants of *A. Simonii* have flowered in different years. A few years ago I was in a Cornish garden, where about three dozen species of Bamboos were grown. The majority had been planted eight years, and I was able to ascertain the heights of the various species. All of them were put in as small plants about 3 feet high. The heights give some idea of what may be expected in eight years from planting:—*Bambusa aurea*, 12 feet: This species is not particularly graceful in habit, but is very valuable on account of its bright, emerald green, which it retains during the entire winter. *Bambusa Maximowiczii*, a dwarf, 4 feet. *Arundinaria anceps*, 15 feet. *Phyllostachys Boryana*, 14 feet: This species has black blotches on the stems. *Bambusa disticha*, 2 feet. *B. falcata*, 14 feet. *Arundinaria Falconeri*, 18 feet: This is one of the most beautiful of all the Bamboos when in full leaf. *Bambusa fastuosa*, 14 feet, with yellow and green foliage. *Fortunei*, 5 feet. *B. Henonis*, 20 feet: This is the queen of Bamboos, being exquisitely graceful and keeping a lovely green through the whole winter. Where one species only is required, this should certainly be chosen. This grew to a height of 24 feet and then seeded and apparently died. Subsequently the roots were excavated with pickaxes and the sections were thrown on a piece of disused ground. A year later I was in the garden, and the owner and myself passing

the spot where the roots had been thrown, saw that they were all sprouting strongly. They were then taken up and carefully planted, and have since made good growth and show no sign of flowering. *Arundinaria Hindsii*, 16 feet. *A. Hindsii* var. *graminea*, 11 feet. *Arundinaria japonica* or *Metake*, 17 feet: This has made rampant growth and had been transplanted to form screens in different portions of the grounds. *Phyllostachys mitis*, 18 feet: This species, generally praised by writers and mentioned as the giant among Bamboos, leaves much to be desired. It is very chary of producing shoots, and the clumps were not a quarter of the size of those of *Bambusa Henonis* planted at the same time. *Arundinaria nitida*, 12 feet, with a spread of 16 feet, a small leaved Bamboo, though not keeping its colour in the winter like *aurea*.

dug out to a depth of 2 feet, and the soil beneath well broken up with a fork to the depth of another foot. The Bamboos were then planted in loam and leaf-mould, and in the winter a heavy mulch of cow-manure was given them. A few had not this trouble taken with them, but had been planted in holes only just big enough to contain the roots, and these showed a remarkable difference in size and vigour from others of the same species planted in prepared pits at the same time. The safest time to plant is considered to be from the middle to the end of May. *Wynndham Fitzherbert*.

PEROWSKIA ATRIPLICIFOLIA.

THIS Himalayan subshrub, belonging to the natural order Labiatae, is well deserving the appellation "The Blue Spiraea." It forms compact

NEW OR NOTEWORTHY PLANTS.

PALISOTA ELIZABETHÆ,* L. GENTIL.

THIS new species (see fig. 176) is intermediate between *P. Pynartii* de Wild. and *P. Albertii*, L. Gentil. It resembles the former in its hairy petioles, but differs in its general form, whilst the leaves are longer and the petiole widely channelled, as in *P. Albertii*. The, long acuminate leaves are marked with greenish-yellow variegation along the median line, so that a well-cultivated specimen makes a handsome stove plant, though considerable space is required for its proper development, as the leaves are 2 feet to 3 feet long.



FIG. 176.—PALISOTA ELIZABETHÆ N.SP.

Bambusa palmata, 8 feet. *B. quadrangularis*, 10 feet. *Arundinaria spathiflora*, 8 feet. *Phyllostachys sulphurea*, 15 feet. *P. Quiloi*, 18 feet. *Bambusa tessellata*, 4 feet. *Phyllostachys viridi glaucescens*, 15 feet. *P. violascens*, 13 feet. *P. nigra*, 16 feet: The black stems of this species have a handsome effect. *Arundinaria nobilis*, 20 feet: This species well merits its name, the giant specimens lately at Menabilly and Pen-jerrick, with arching, pennoned canes towering aloft to a height of nearly 30 feet, being the very personification of grace. *Bambusa marmorea*, 7 feet. *Bambusa gracilis*, 13 feet 6 inches (a very charming Bamboo). *Arundinaria Veitchii*, 2 feet: In the winter, the outer rims of the leaves of this species fade and become white, giving the plants a variegated appearance. All these Bamboos, except a few, were carefully planted. Circular pits 4 feet in diameter, were

bushes about 3 feet high and as much in diameter. The erect stems are clothed with silvery-grey foliage and terminate in spikes of rich violet flowers, which are slightly overcast with a silvery-grey mealy powder. The combination of silver grey and rich violet makes this shrub exceedingly handsome, and its value is greatly increased by the lateness of the flowering period; it flowers at a time when most shrubs are past blooming. From August until the end of October the bold spikes of flowers are produced, the individual flowers are small pea-shaped and cover densely the erect stems. *P. atriplicifolia* is an ideal subject for shrubberies, but it can also be used with good effect in the herbaceous border. It will grow splendidly in a sunny position in light and well-drained soil, and is easily increased by means of cuttings in the spring. *H. Paul, Guildford*.

PALISOTA ALBERTII,† L. GENTIL.

At first sight this species bears a resemblance to *P. Elizabethæ*, but the leaves are not variegated, and the petioles are without the marginal hairs. It is a stronger-growing species, and scarcely so fine a garden plant as the other, but would appear to advantage in a Palm house or other large hothouse, where ample room could be afforded.

* *PALISOTA ELIZABETHÆ*, L. Gentil. — Canes-cens. Internodia 15-20 cm. longa. Folia maxima, cm. 35-90 longa, 10-25 cm. lata, in petiolum longe attenuata, ad summum latiora, obovato-lanceolata, apice longe acuminata albo-maculata; pagina sup. glabra, viridi-nigrescente, pagina inf. velutino-grisea, v. argenteo-albescente; petiolus crassus pilosus, 10-25 cm. longus, late canaliculatus marginibus fibrillosis; pilinumerosi, longis rufescentes. *Louis Gentil*.

† *PALISOTA ALBERTII*, L. Gentil. — Subcaulis. Folia maxima immaculata, viridi-nigrescentia, subtus velutino-grisea vel velutino-argentea, cm. 45-90 longa, 10-25 lata, in petiolum longe attenuata, ad summum latiora, apice subito breviter acuminata, petiolo crasso, 10-25 cm. longo, lato canaliculato, piloso pilis brevibus, appressis, marginibus e fibrillosis. *Louis Gentil*.

THE ROSARY.

SOME MORE YELLOW ROSES.

I was much interested in the note (see p. 368) on yellow Roses by the Rev. D. R. Williamson. But surely he is mistaken in supposing that Mme. Bérard is a hybrid between Gloire de Dijon and Général Jacqueminot. My authority describes it as a hybrid between Mme. Falcot and Gloire de Dijon, and the variety has every appearance of being so, both in foliage, wood and form of bloom. The selection given by Mr. Williamson is very good, but if Gloire de Dijon and Bouquet d'Or are to be included to make up the list he has overlooked a number of varieties with clearer colours and also good growers. Perle des Jardins, Isabella Sprunt, Etoile d'Or, and Boule d'Or are better. But

understand why Austrian Yellow, Harrisonii and Persian Yellow are left out of any list of yellow varieties, however short. But, as the Rev. D. R. Williamson has mentioned so very new a variety as Miss Alice Rothschild, I would like to call attention to a few others, also new, which, with the exception of the splendid Wichuraiana Aviator Blériot (a yellow Rose that promises to rival William Allan Richardson on account of being more constant and clearer yellow in colour), I have proved to be really excellent.

The first is Golden Aimée Vibert. This is identical with the original in all respects but colour, which is a decided golden yellow in the young flowers, and retains much of its depth when expanded. When I say it resembles its parent in other respects, it needs no further praise. The others are ordinary dwarf growers,

buttonhole flowers, while I know of few Roses to equal it for perfume. Mrs. Peter Blair is lemon-coloured with a golden-yellow centre; this variety also is very free in blooming, whilst the flowers are of good form and sweet-scented. Four gold medal roses are found in Goldfinch, a deeper golden-yellow than Electra, and, like that Rose, very early. It is a strong-climbing Polyantha and decidedly more hardy than I have found Electra. Shower of Gold has not quite so much orange as in William Allan Richardson; it is very hardy and vigorous, and with the glossy foliage so characteristic of the Wichuraianas. Both this and Aviator Blériot are grand additions to our climbers. Duchess of Wellington is saffron-yellow in its main colouring; while the newer Lady Hillingdon produces beautiful, long, tapering buds of pale orange-yellow, and was already known as a good Rose for market cut-flower production before it was put into commerce. This last is the newest on my list. With us it produces long stems and stalks with solitary flowers. I must not omit Gardenia from the Wichuraianas, as this is so very early and so decidedly golden-yellow in its younger stages. It is a good grower and handsome even when not in flower, as its foliage is very beautiful. I fancy it must have received its name from the perfume which so closely resembles our stove shrub of the same appellation. If Medea will grow in the Rev. D. R. Williamson's garden, all of the above will succeed there. A. Piper, Uckfield.



FIG. 177.—CYPRIPEDIUM CHARLESWORTHII TÉMÉRAIRE.

perhaps the flowers of the last two do not open well with him. By the way, it would be interesting to know if Peace succeeds so far north as Kirkmaiden. Here (mid-Sussex) it is invariably one of our best Roses, especially in autumn, and often the blooms develop as deep a yellow as Isabella Sprunt. Perle de Lyon, Etoile d'Or and Mme. Pierre Cochet are omitted from the list. So, too, is Mme. Carnot (I mean the Noisette variety, not the Tea-scented Rose of that name). Billiard et Barré, Belle Lyonnaise, Celine Forestier, Alistair Stella Gray and William Allan Richardson are five other climbers that it would be inadvisable to leave out from any collection of yellow Roses that includes Gloire de Dijon and Mme. Bérard. Among the Chinases, Arethusa and Chin Chin are good, pure yellows. Then there are Sulphurea, Caroline Kuster and Beryl among the dwarfier growers. It is not easy to

but all are free-blooming and I have found them hardy:—

James Coey, deep golden-yellow, good both for bedding purposes and furnishing cut flowers. Senateur Mascaraud, amber-yellow with canary-yellow centre; this is indeed a grand Rose, and although very large and full-petalled, always opens well; the blooms are globular and carried boldly upright. Instituteur Sirdey is a very rich and deep golden-yellow Rose; the blooms are carried in bold, spreading trusses, relieved with handsome foliage. Mrs. Dudley Cross is a cham-is-yellow, tinted in the autumn somewhat like Marie Van Houtte. Why has this last been omitted from the list? It is a more decided yellow than Gloire de Dijon. Mme. Paul Varin-Bernier has very deep melon-yellow-coloured blooms. This is a very free-flowering variety, grand as a bedder, and the blooms make pretty

ORCHID NOTES AND GLEANINGS.

CATASETUM LONGIFOLIUM.

THIS species of *Catasetum* is totally distinct in growth from any other species, its habit being semi-pendulous, the long, narrow leaves arching gracefully from the hard, Cymbidium-like pseudo-bulbs. It was originally discovered in 1836 by Sir R. Schomburg growing high up on Palm-trees in Demerara, and has been occasionally flowered in gardens, the last time we recorded it being when it flowered so finely with Sir Trevor Lawrence, Bart., K.C.V.O., some years ago. In the form of its flowers, too, it scarcely ranks with any other species, for although at first sight appearing to belong to the small section *Ecirrhosæ* (without cirrhæ), it bears a pair of short bristles or rudimentary cirrhæ on the column. The flowers, which are showy for a *Catasetum*, have the sepals and petals tinged with rose, the deep, pot-like labellum orange spotted with red on the upper half, which has a blackish-velvety margin. It is in flower in the gardens of W. E. Balston, Esq., Barvin, Potter's Bar.

CYPRIPEDIUM CHARLESWORTHII TÉMÉRAIRE.

THE very remarkable *Cypripedium* illustrated in fig. 177 was shown by Messrs. Sander & Sons at a meeting of the Royal Horticultural Society, held on November 22. It is a unique variety, being perfectly distinct from the thousands of plants of this species which have been imported. Its chief characteristic is due to the wonderful development of the dorsal sepal, which is very large in proportion to the other parts of the flower. The petals and lip, both in form and colour, resemble a large form of typical *C. Charlesworthii*, but the dorsal sepal is more than 3 inches in height and nearly 4 inches in width. In form, it is broadly ovate, the apex is carried to a point, and, at the time of exhibition, the sides were wavy, as shown in the illustration. These wavings might be expected to smoothen out a little as the flower became older. The ground is white, closely veined with a delicate tracery of a rosy-lilac colour. The veining is well shown in Mr. Worthington Smith's sketch.

CYPRIPEDIUM MINOTAUR.

CYPRIPEDIUM MINOTAUR, which is illustrated in fig. 178, is the result of a cross between *C. Euryades* and *C. Minnie*, and it may be described as one of the very best hybrid *Cypripediums* which have been raised by Lieut.-Colonel Sir Geo. L. Holford (gr. Mr. H. G. Alexander). The broad dorsal sepal is pure white, with a small, yellowish-green base, and much blotched with deep claret-purple colour. The petals and lip are yellow at the margins, the inner portions being tinged with purplish brown. The flowers are very large, much larger than is shown in the illustration, and they are remarkable for the thick substance which characterises all the parts. Respecting the parentage of *C. Minotaur*, it is interesting to observe that *C. Euryades* is a cross between *C. Boxallii* and *C. Leeanum*; whilst *C. Minnie* was obtained from a cross from *C. Nitens* and *C. Leeanum*. Thus it may be said that *C. Minotaur* is of three parts insigne, two of *Spicerianum*, one of *villosum*, and one of *Boxallii*. *C. Minotaur* was awarded a First-class Certificate at the meeting of the Royal Horticultural Society on November 22.

LÆLIO-CATTLEYA OLIVIA (see p. 431.)

(*LÆLIA JONGHEANA* × *CATTLEYA SCHRÖDERÆ*.)

At the meeting of the Orchid Committee of the Royal Horticultural Society on November 8, Lieut.-Col. Sir George L. Holford, K.C.V.O., Westonbirt (gr. Mr. H. G. Alexander), showed this handsome new hybrid raised in his gardens, and for which an Award of Merit was given. Its nearest ally is *L.-C. Baroness Schröder* (*L. Jongheana* × *C. Trianae*), but in this new hybrid the flowers are larger and the charming peach-blossom tint of *C. Schröderæ* and its fine substance and sweet odour are well displayed (see fig. 131). The sepals and petals are of a delicate peach-blossom tint, with the veining slightly darker. The greater part of the finely-expanded labellum is deep orange colour, lighter towards the margin, which is tinged with rose colour. *L. Jongheana* when used as a parent has the habit of narrowing the labellum of the progeny, but in this case *Cattleya Schröderæ* has provided the dominant feature.

PHOTOGRAPHING FLOWERS.

THE art of taking photographs of flowers is by no means a simple one, nor can it be properly accomplished without a considerable amount of skill acquired only by much practical work and keen observation.

The photographer of flowers has a much more difficult range of subjects to deal with than the portrait or landscape photographer. He has to take into consideration the variety and range of colours which are so delicately blended in flowers, and these colours require special treatment.

In order to obtain the proper degrees of light and shade it is best to use specially-sensitised, dry plates, known as "Orthochromatic" plates. These are of great value in obtaining good results (according to the light and shade relationship) with such colours as yellow, blue, red, orange, violet, and purple, as they are more sensitive to colour than the ordinary plates.

In conjunction with the Orthochromatic plates, it is advisable to use a coloured screen or filter. The object of the screen is to slow down the action of the blue and violet rays of light, and thus to enhance the photographic effects produced by the slower acting colours of red, yellow and green.

The colour screens, or filters, are placed either in front of or behind the lens. Since the light has to pass through this coloured medium, a longer exposure is necessitated, which varies according to the density of the colour of the medium used in making the screen.

With some, the exposure has to be prolonged six, and with others as much as twelve, times longer than when no screen is used. But a longer exposure must not be taken to be a disadvantage, as will be readily seen when a plate is exposed with and another without a colour screen.

Much depends on correct exposure, as the strength of the light varies greatly both for

chromatic plates are developed in the same manner as ordinary ones. Careful handling and accurately judging the required density during the process of developing are important factors towards success. The printing is carried out in the usual way.

For the amateur who does not care for the rather long process of toning and fixing his prints, I would recommend the use of self-toning



FIG. 178.—CYPRIPEDIUM MINOTAUR.

to day and also according to locality. To obtain the best results, it is highly important that the camera should be equipped with a high-class lens. Suitable backgrounds in variety are also necessary. For outdoor subjects it is advisable, if possible, to choose a day when there is little wind and the light not too glaring.

After the exposure has been made, the Ortho-

papers which only need fixing, an operation requiring about 10 minutes. At this time of the year, when sunlight cannot be depended upon, it is often convenient to use some brand of gas-light printing paper such as "Velox."

In all cases it is necessary to well wash the prints afterwards, and to keep all the dishes and other utensils clean. W. J. T. J.

FOREIGN CORRESPONDENCE.

THE SAXIFRAGAS OF THE MARITIME ALPS.

MR. FARRER's interesting notes on the Saxifragas of the Maritime Alps have induced me to send a few lines about this very controversial subject. In his *Flore des Alpes Maritimes* my countryman, Mr. Burnat the first authority, I think, on these questions, gives his opinion which is that of the scientific botanist purely. For a long time I have collected, sown, grown, nursed and studied every one of these Saxifragas, and I must say that on one or two points I cannot accept his opinion. In the group of *Euaizoon* he first mentions *S. lingulata* (Bell.) which occurs, according to him, from the "confluent du Var et de la Vésubie jusque dans les roches de la région Alpine" to Tenda. This will horrify my friend Mr. Farrer, but the explanation is this, that Mr. Burnat considers the *S. lingulata* under two forms, *S. lingulata* *Belardii* of Sternberg, and *S. l. lantoscana* of Engler. I always said that these are two quite different plants in cultivation, requiring different treatment, and that their seedlings are differentiated in character. I agree with the view of Mr. Boissier, who published the first *S. lantoscana* in his *Diagnoses* (Ser. ii., fasc. 2., p. 63). My own *S. lantoscana*, the first plant I had of it, came from Mr. Boissier himself, the author of the plant, and I always kept it to be conserved here as a document. This is in answer to Mr. Robinson, who, in his note in a recent issue, seems to doubt whether I have the right plant. I suppose Mr. Boissier knew his plant better than anybody else! The primitive mother plant is still in the wall garden of Boissier at Valleyres, and cannot have been crossed with *Aizoon*, as it never was sown. On the other hand, I never found a *Saxifraga lantoscana* in the Maritime Alps elsewhere than in the Lantosque and in the Var valleys, where it

where it flowered in 1852 on the wall. There it still exists, so that there can be no doubt about the plant which I obtained from Boissier 30 years ago. Moreover, it is identical with those I found several times in the Lantosque and Var Valleys.

For many years I have been studying particularly these Saxifragas of the Maritime Alps, so that I am very anxious to keep the true names at Floraire, where they are grown in separate places in order that they may not intercross.*

Saxifraga lingulata (Bell.) is the Tenda Saxifraga. It grows there in the limestone rocks

beautiful, the most elegant, if not the most brilliant, of all the Saxifragas. It is a perfect gem, and much better in every respect than *S. longifolia* of the Pyrenees. The description of it is well given in Engler's *Monograph of Saxifraga* (pp. 235-236). From the main road, between Tenda town or village—which you like—and the station of Vievola, that beautiful plant adorns the rocks and hangs over the road. It is a marvellous sight which, once seen, is never forgotten. Quite another thing is *Saxifraga cochlearis* (Reich), which my good friend Engler, I cannot think why, identifies as a variety of



FIG. 180.—THE BORÉON VALLEY: THE ROCKS IN THE BACKGROUND ARE COVERED WITH SAXIFRAGA FLORULENTA.



FIG. 179.—ST. MARTIN LANTOSQUE WITH THE BORÉON VALLEY IN BACKGROUND.

abounds at an altitude of 1,000 feet to 3,000 feet. Burnat gives a great many localities outside that territory, and even at Valdieri in the north of the Maritime Alps; but Boissier speaks only of the plant in the Lantosque Valley. Of course it may have been found since 1850, when he discovered it, in some other place, and Mr. Burnat might be right. But I myself found it only in the Alps of Lantosque and of the Var Valley. The forms I found in the Cairros all belong to the *Cochlearis* group. Boissier described the plant growing in his garden at Valleyres,

between 3,600 feet and 4,800 feet, and is found again in Sicilia and on the south Apenines and the Abruzzes. In my opinion, it is the most

* Here is Boissier's description of *Saxifraga lantoscana*:—*S. perennis* late caespitosa glaberrima, foliis rosularum patentibus lineari-spathulatis inferne attenuatis obtusiusculis supra convexis margine integris foveolatis foveolis squamulis calcareis albis oblongis versus apicem folii confluentibus tectis, caule erecto foliato in paniculam oblongam subunilateralem superne abeunt, foliis caulinis lineari-oblongis diminutis, ramealibus linearibus minimis, ramis tenuibus erecto-patentibus 4-7 floris, calycis pallide virentis laciniis ovatis . . . petalis lacteis obovato-oblongis subspathulatis calyce triplo longioribus quinquenerviis ad unguem lineis punctorum carneorum saepe pictis.

lingulata! This Saxifraga was discovered by our Swiss botanist, J. de Charpentier, in 1827 when he visited the Maritime Alps, and Reichenbach, discovering it in the herbarium of Charpentier much later on, supposed at first that it was a hybrid between *S. cuneifolia* and *S. lingulata*! I do not believe that there is a plant better marked and characterised than this one. It is so well known that there is no need to give a description of it. In our gardens it is the last to flower of every Saxifraga of the *Euaizoon* group. It comes out in July, and keeps its pure white flowers borne on red stems till the middle or sometimes the end of August. Its culture, as well as that of the two first-mentioned plants, is quite simple, all three requiring sun and, if possible, a vertical position. If planted in old walls they succeed admirably, but they grow in the rock garden, too, and in sunny and dry places in England. But this is a very polymorphic plant, not that its general form is changing or not stable, but the size of the rosettes, of the leaves, and of the flowers varies much according to habitat, namely, the main valley of the Roja or in the lateral ones. In the Cairros Valley there is a form of *S. cochlearis*, which seems to be the *S. cochlearis* minor of nurserymen (which is very often sold as *valdensis*, and which I found generally under that name in English Alpine gardens). This very pretty plant is quite distinct by its very glandular and short stems, also by its short and thick leaves, and the dense habit of the plant. I took the liberty to dedicate it to General Sir Dighton Probyn, who grows it so well in his Alpine garden at Windsor Castle, and called it *Saxifraga Probynia*. The most curious of all the Maritime Alps Saxifragas is certainly *S. florulenta*, which Mr. Farrer praises so much that I have nothing further to add. I send some photographs taken in the Boréon Valley a year ago, showing the rocks, where it grows, and the lake which Mr. Farrer mentions in his note (see p. 365). The whole

country is a bed for *S. florulenta*, and at the foot of these steep rocks flowers *Viola nummularifolia*, which I am glad to know Mr. Farrer found there. He must recognise now that when I praised it to him I was not exaggerating by calling it the first of the Alpine *Violas*. Unhappily I cannot grow it well at Floraire. It is "re-belle" to my culture, and I hope my friend at Ingleborough has better results than myself. But we shall try it again.

About *S. lingulata*, of course I never meant collectors to seek this in the Bâconn Valley. If I wrote to Mr. Farrer of it, it was, as he says, himself, a slip of the pen, as I meant *S. pedemontana*. Henry Correvo, Geneva, November 27.

— I am delighted to have such timely reinforcement from M. Correvo. His remarks even embolden me to stand firm against Burnat himself in maintaining the full specific rank of *S. lantoscana*. I have not his volumes here, though, and if, as M. Correvo says, he merely quotes *S. lingulata lantoscana* from the Vésudie, and *S. lingulata Bellardii* from the other ranges, without setting up an archetypal *lingulata* as their head, then am I to suppose that the ordinary *lingulata* of Tenda is his *Bellardii*? I myself had imagined him to quote *Bellardii* and *lantoscana* as forms, both of them, of *lingulata*. If this is not the case, what becomes of the Tenda variety of *S. lantoscana*, which occurs with *lingulata*, and yet remains obviously and invariably distinct from that plant, while it is equally obviously not identical with *lantoscana* of the Vésudie? For this plant still remains to be accounted for, if it is not, as I had concluded, the *Bellardii* form of *lingulata* (if form it be) answering to *lantoscana* of the Var and the Vésudie. It is interesting, by the way, to hear the origin of *S. Probyni*, which had puzzled me. But I cannot help regretting that M. Correvo should have complicated complication still further by launching upon us a new species, which is really our old friend *cochlearis* minor under another name. All M. Correvo's remarks on *S. lingulata* I echo, with applause; but do not easily see how Burnat can quote *lantoscana* from the Valdieri district, for the Valdieri district is purely granitic, I fancy, fertile in pedemontana and florulenta, and, therefore, no sort of dwelling-place for such calcareous plants as *lingulata* and *lantoscana*. Far down the valley, indeed, near Borgo San Dalmazzo, a friend of mine saw a big Silver Saxifrage on a sunny limestone rock. But, from his description and the neighbourhood (the Borgo is the Northern Gate of the Col de Tenda), this must have been the type *lingulata*. With regard to *cochlearis*, and my suggestions about its origin, I commend to M. Correvo and to all sympathisers the fact that it is where *cochlearis* adopts a *lantoscana* situation that its approximation to *lantoscana* becomes so suggestive. In the shady gorge below Saorgio, in places exactly similar to those favoured by *lantoscana* in the gorge of the Vésudie, *S. cochlearis* grows large and diffuse and pale and spatulate, until one cannot help guessing its affinity to the other. In the sunny rocks, which it usually prefers, it grows smaller and denser and much more clearly distinct. Yet it is no less abundant in the Saorgio gullies than on the hot rocks of San Dalmazzo. I have a very large series now from these different stations, and could show an enormously varied set of leaves, some of which draw very near to *lantoscana* (one plant, indeed, so plainly *lantoscana* itself or *Bellardii* that I must needs insist that a label has been misplaced). Finally, I would add that, though *cochlearis* and *valdensis* take any amount of sunshine in gardens, and though *lingulata* seems to be quite indifferent in the matter, there is no sort of doubt that here, at least, *S. lantoscana* is most grateful for such northerly rocks and cool exposures as remind it of St. Martin and the sunless rocks by the Vésudie. Reginald Farrer.

ABUTILON THOMPSONII AND OTHER SPECIES.

In the *Gardeners' Chronicle* for October 22 of this year, p. 297, Mr. R. L. Lynch has pointed out that there are two similar, although, in point of fact, different, plants in cultivation under the name of *Abutilon Thompsonii*. This note has produced the inevitable enquiries, and several specimens of the cultivated plant have been sent, but Mr. Lynch states, in the issue for November 12, p. 353, that no one has sent to him the true *A. Thompsonii*, and I find it is not in cultivation at Kew, therefore it would appear to be a rare plant. Mr. Lynch also considers the original *A. Thompsonii* to be a variety of *A. striatum*, having the same glabrous leaves, and flowers of the same colour, merely differing in its variegated leaves, whilst the plant generally known as *A. Thompsonii* has pubescent leaves, and flowers (according to Mr. Lynch) less conspicuously veined. Having been favoured by Mr. Lynch with good specimens of the plant he knows to be the original *A. Thompsonii* and of *A. striatum*, I have compared them critically with the material in the Kew Herbarium with a somewhat surprising result.

Turning first to *A. striatum*, it soon became clear that two perfectly distinct species are involved under this name, and that all previous authors have made a remarkable mistake with regard to it. I find that it was first imperfectly described as "*Abutilon striatum*, Dickson, in *The Botanist* med"; by Lindley, in his *Botanical Register*, 1839, Miscellany, p. 39, and was well figured and fully described that same year by Dickson in *The Botanist*, vol. iii., t. 144. The specimen Mr. Lynch sends as *A. striatum* is unquestionably the true plant of Dickson, agreeing accurately with his description and figure. An inferior figure of it is given in the *Botanical Magazine*, t. 3840, under the erroneous name of *Sida picta*. But, to my surprise, not a scrap of the cultivated plant described as *A. striatum* or as *Sida picta* is preserved in the Kew Herbarium. Dickson states that it was "introduced about two years ago (i.e., about 1837) into the Glasgow Botanic Garden, most likely by seeds from Mr. Tweedie." And, in speaking of its geographical distribution, he states that South Brazil is its native country, and that it had been collected there by Gardner, and at Rio Negro by Tweedie. Lindley, at the place above quoted, refers to it as "this South Brazilian species." From that time until now, all authors have identified *A. striatum* with the Brazilian and Uruguayan plant, whereas I find it to be an entirely different species, very easy to distinguish. I cannot find any South American specimen in the Kew Herbarium that is like *A. striatum*. But I do find one specimen that is identical with it, and this was collected in 1892, near Santa Rosa in Guatemala, by Heyde and Lux (No. 2,960), and distributed by Mr. J. Donnel Smith under the wrong name of *A. venosum*. Now it happens that Mr. G. Ure Skinner settled in Guatemala in 1831, and sent from there a great many plants into this country. I have very little doubt that *Abutilon striatum* was one of them, its origin by some mischance having been lost. Mr. Skinner was a Scotchman, and would be likely to send plants to his native land. At any rate, there can no longer be any doubt that Guatemala is the native country of *A. striatum*. A specimen of it is in the British Museum collected there by Lehmann, and another specimen (a variety), mentioned below, from the same country, are confirmatory of this conclusion.

With regard to the plant from South Brazil, Uruguay and Buenos Ayres, hitherto mistaken for *A. striatum*, I find that this was first described in 1833 as *Sida picta*, Gill., in Hooker's *Botanical Miscellany*, vol. iii., p. 154, and was subsequently published as *Abutilon pictum*, by Walpers in his *Repertorium Botanices*, vol. i., p. 324, under which name the plant should now be known. It was in cultivation in the Paris

Botanic Garden in 1857, and there are dried specimens at Kew, collected in gardens in India many years ago. Some of the Brazilian specimens have variegated leaves, so that it varies, like *A. striatum*, in that character. It is a plant well worth a place in our gardens. To make clear to botanists the plant I mean, I quote the two following distributed specimens:—Organ Mountains, Gardner, 321; Corcovado, Gardner, 5,369.

Turning now to *A. Thompsonii*, it would appear that this must have been introduced 42 or 43 years ago, since a First-class Certificate was awarded for it when first exhibited by Messrs. Veitch and Sons at the Royal Horticultural Society's meeting on September 1, 1868. There is a notice of it in the *Gardeners' Chronicle*, 1868, pp. 918 and 945, and in *The Florist and Pomologist*, 1869, p. 20, are a short note and a figure of a branch without flowers, but no description; it states, however, that Mr. Veitch introduced it from Jamaica, and that it "is evidently a sport from *Abutilon striatum* . . . now naturalised in Jamaica." The plant Mr. Lynch sends as the true *A. Thompsonii* agrees with that figure, and, I think, may be accepted as correctly named. Also, there can be no doubt that it is only a variegated form of *A. striatum*, differing from it in no other character. Of this also, there is no specimen preserved in the Kew Herbarium. Next, we have the plant commonly cultivated as *A. Thompsonii*, which, as pointed out by Mr. Lynch, is at once distinguished from the original plant by the pubescence on the leaves, especially on the under surface.

Mr. Lynch, however, writes to me that "there is a great difference in the flowers and buds, the flowers not being at all like those of *A. striatum*; they are without the characteristic veins." Also, there is the very distinct difference I note in the colour of the pubescence on the calyx, as detailed below. From Mr. Lynch's note on p. 353, it appears that no one interested in the matter appears to have the original *A. Thompsonii*, and no one can give the history of the origin of the plant now cultivated under that name. The case, therefore, is as follows:—Over 40 years ago a handsome decorative plant was introduced into and doubtless widely distributed from Messrs. Veitch & Sons' nursery, yet at the present day only two plants of it are recorded as extant, although another form is widely cultivated all over the country under the same name. It seems incredible that the original form can have everywhere died out and been replaced by the plant in question. I am inclined to believe that the explanation is contained in a suggestion made by Mr. James Mayne, of Bicton Gardens, Devonshire, who writes:—"I am forwarding growths and flowers of a variety that has passed under the above name for close upon 30 years to my knowledge, but according to Mr. Lynch it is not *A. Thompsonii* at all. Wrongly named or not, it is a very valuable plant for summer decoration of the flower-garden, its highly-coloured foliage and flowers claiming much attention from the many visitors who come to see these gardens during the summer, when they are opened to the public for a small fee twice weekly. Mr. Lynch informs me that the true *A. Thompsonii* is growing in a conservatory near the Cambridge Botanic Gardens, and has been there for over 30 years; now it would be most interesting to learn whether that variety has been used for sub-tropical work or not during those many years, and, if so, with what amount of success?" The specimen Mr. Mayne sends is identical with that received from Mr. Lynch as being the false *A. Thompsonii*, though the variegation is much more beautiful, the yellow being far brighter, but the form of the leaf and its pubescence are the same. The question then is this: Are the original *A. Thompsonii* and the plant now generally known by this name distinct varieties of separate origin, or is the commonly-cultivated plant a mere condition of the true *A. Thompsonii*, which owes its pubescence and change in the colour of the flowers to having been annually subjected to an open-air treatment for several years? Also, would

cuttings of the original *A. Thompsonii* become pubescent and the flowers alter in colour if annually planted out in the open air? The leaves of the original *A. Thompsonii* and *A. striatum* are, however, not absolutely glabrous, the pubescence being represented by a few scattered minute tuft-like or stellately-branched hairs, only visible under a lens. With regard to this variation in pubescence, it is interesting to note that the Kew Herbarium contains another wild specimen from Guatemala, collected by Heyde and Lux (No. 6,073) on the Cerro Redondo, which has leaves very pubescent beneath, and is practically the same as the pubescent *A. Thompsonii*, except that the leaves are not variegated and the hairs not quite so fine, more stellate, and those on the calyx brownish.

Upon examining the plant grown at Kew as *A. Thompsonii*, I have been surprised to find that there is still another form cultivated under that name, for it is not quite the same as either of the above-mentioned forms of that plant. The leaves are slightly different in outline, more cordate at the base, the lobes seem more closely placed, have more bulging margins, and the middle lobe is relatively much shorter, and as long as or longer than the undivided part, but never twice as long, as it is in *A. Thompsonii*. The pubescence on the leaves is minute, fine and scattered and is best seen with the aid of a lens, except on very young leaves. I am informed that this plant does not flower at Kew, so cannot say if there is any other difference. I think it probable that this may be a hybrid form, of which a few appear to have been raised between 30 and 40 years ago and later. As it appears to have no distinctive name, I propose to call it *A. striatum* var. *kewense*.

Finally, I find that there is a plant cultivated at Kew as *A. Thompsonii* var. *flor. pleno*. This again is quite different from *A. Thompsonii* in the form of its leaves, and cannot be considered as being merely that plant with double flowers, the leaves being only three-lobed, not variegated, and glabrous on both sides. It is not improbable that this is of hybrid origin, and that *A. pictum* may have been one of its parents, as the general outline of its leaves more nearly approaches that of the leaves of *A. pictum* than of *A. Thompsonii*. As it can scarcely be considered to be a variety of the latter, I propose to call it *Abutilon pleniflora*.

The distinctive characters of all the forms above-mentioned may be conveniently tabulated for reference as follows:—

A.—Leaves three-lobed:—

Leaves green, glabrous on both sides, with the middle lobe nearly half as long again as the undivided part and slightly narrowed in at its base. Flowers double. Of garden origin: *A. pleniflora*, N.E. Br.

Leaves green or variegated, sometimes glabrous on both sides, sometimes glabrous or pubescent on the veins above and more or less pubescent beneath, with the middle lobe usually shorter than but sometimes equalling the undivided part and broadest (not narrowed in) at the base. Calyx inch long, half or more than half as long as the corolla, with lobes very little longer than the tube, velvety-pubescent with brownish hairs. Corolla $1\frac{1}{2}$ – $1\frac{3}{4}$ inch long, orange or yellow, veined with crimson. A native of South Brazil, Uruguay and Buenos Ayres: *A. pictum*, Walp.

AA.—Leaves five-seven-lobed, with the middle lobe more or less narrowed in at its base:—

Middle lobe usually twice or more than twice as long as the undivided part of the leaf, and more than twice as long as broad. Calyx $\frac{3}{4}$ – 1 inch long, half or more than half as long as the corolla, with lobes nearly or quite twice as long as the tube. Corolla $1\frac{1}{2}$ – $1\frac{3}{4}$ inch long, orange, conspicuously veined with dark crimson. Leaves glabrous above and nearly so beneath, the hairs being few and scattered, minute and only visible under a lens. Calyx thickly pubescent with brownish hairs. Leaves green, without variegation. A native of Guatemala: *A. striatum*, Dicks.

Leaves variegated with yellow, not pubescent: *A. striatum* var. *Thompsonii*, Veitch.

Leaves variegated with yellow, thinly pubescent above, more thickly beneath with fine hairs. Calyx velvety-pubescent with white hairs. Corolla light reddish-orange, with deeper reddish veins, not very conspicuous. *A. striatum* var. (*A. Thompsonii*, Hort.).

Middle lobe less than twice as long as the undivided part of the leaf and sometimes only about equalling it, usually much less than twice as long as broad; pubescence as seen with aid of lens, minute and fine, rather scattered. Flowers not seen. Probably of garden origin: *A. striatum* var. *kewense*, N.E. Br.

The pubescence mostly consists of stellately-branched or tuft-like hairs, mingled with some simple ones.

The original spelling of the name is *Thompsoni*, not *Thompsonii*, but the terminal 'i' is now duplicated in order to bring it into agreement with the accepted rule as to specific names ending in a consonant, adopted at the Vienna botanical congress. N. E. Brown.

The Week's Work.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Surrey.

Warm house Orchids.—In the East Indian house most of the species of *Aërides*, *Saccolabium*, *Angraecum*, *Vanda*, *Renanthera*, *Sarcanthus*, *Rhynchostylis*, and *Stauropleura* have practically finished their growth, for although such plants are never absolutely dormant, they require to be treated, in many respects, as resting plants. These species, having no pseudo-bulbs, should never be kept so dry at the roots as the deciduous kinds, neither should they be given so much water as during the growing period. When affording water to those that are dry, it is advisable to just lightly sprinkle the moss on the surface, merely to keep it alive. *Aërides crispum* and its varieties *Lindleyanum* and *Warneri*, we find, do thoroughly well elevated on the centre stage of the intermediate house, growing in this comparatively cool temperature, as may be seen in their robust growth and short, shiny leaves. *Renanthera Lowii* should be placed in the darkest corner of the house, where no sunshine can come on it at any time. The winter-flowering *Angraecum sesquipedale*, now showing for flower, should receive a trifle more root moisture than those which are at rest, but the *Sphagnum*-moss must not be kept in a saturated condition. Should there be any yellow thrips in the house, they will be sure to find their way to the flower-buds as they commence to open, therefore, if the presence of these insects is suspected, it is advisable to vaporise the house every week until the flowers are past. Plants of the beautiful *Vanda cœrulea*, although tried in this and other houses, have always proved difficult to keep in good health for long together. During the past summer the plants (about 30) were placed at the cooler end of a small *Cattleya* house, where the bottom ventilators close to them have been, and are now, always more or less open. The plants have been kept well shaded at all times, and, during the past two months no damping between the pots has been allowed, the surface moss of those that were dry being very lightly watered with a fine-rose can just before sunset. The plants generally have made good growth, and some of them have bloomed well, one plant, the variety *Choletiana*, is now in bloom, with two spikes carrying 19 fine flowers between them. Up to the present time, there is no indication of fresh spot or disease among them. The temperature at this, the cooler end of the house, fluctuates between 55° and 60°, the atmosphere immediately surrounding the plants is fairly dry, and as the water pipes are rather close up under the open stage, a piece of zinc is laid along them, so as to prevent direct fire-heat from reaching the plants. The supposed natural hybrids from *V. cœrulea*, as *V. amœna*, *V. Charlesworthii*, and *V. Mooreana*, appreciate similar treatment. Such *Phalaenopsis* as *P. Schilleriana*, *P. Aphrodite*, *P. amabilis*, and others, that are sending up their flower-spikes, should be kept fairly moist at the root, but it is not a safe practice to dip the baskets in water at this season, because the compost then remains wet for a very long time, and the roots that are inside suffer considerably. It is better to allow the *Sphagnum*-moss to become of a whitish-green colour before a fresh supply of water is given, and then only to lightly spray the moss on the surface, and around the sides of the baskets. When affording water, care should be taken that none of it remains in the centre of the plants. Our plants are placed with their

leaves in as slanting a position as possible, so that this danger is avoided. Well-rooted plants of *Oncidium Cavendishianum* now showing their flower-spikes should be kept well supplied with water at the root, but its allied species, *O. Lanceanum*, being at rest, should be kept rather drier. The dwarf-growing *Lælia rubescens* (*peduncularis*) grows and flowers freely when suspended on the south side of this house, and now that its flower-spikes are pushing up, the plants should be elevated among other plants on the stage; if kept too near the roof glass, the tips of the spikes are apt to get injured by frost. Among small-flowering *Oncidiums*, *O. chierophorum* is a very pretty object. The spikes are now pushing up, and when the flower-buds are prominent the plant may be removed to the warm house, where the flowers will open better than if left in the cooler division, but when fully open the plant may be returned to its growing quarters, and the flowers will last in good condition for several weeks if not injured by damp. After the flowers fade, afford but little water to the roots till growth recommences, when repotting may be done. This *Oncidium* requires only a very thin layer of *Osmunda* fibre to root in, and it does best when elevated to the light in the intermediate house.

THE KITCHEN GARDEN.

By JOHN DUNN, Kitchen Garden Foreman, Royal Gardens, Windsor.

Cucumbers.—Provision should be made for sowing Cucumber seeds, so that good, strong plants may be ready to put out by the third week in January. The pit in which these young plants are to be grown should be thoroughly washed and a hotbed made up to within 18 inches of the glass. The seeds should be sown singly in small pots, which should be partly plunged when the temperature of the bed is at about 80°. The soil may consist of loam and leaf-mould in equal parts and the seeds should not be covered too deeply; $\frac{1}{2}$ inch of fine, sifted soil is quite sufficient. If the compost is in good condition no water will be necessary until growth commences, when the seedlings may be gently watered with soft water at a temperature of 80°. When the young plants are well above the surface they should be kept as near the glass as possible by raising the bed in which they are plunged to within a short distance of the glass. The variety *Every Day* is a good sort for sowing at the present time. If all has gone well with August-planted Cucumbers, they will still be bearing freely, and if the roots have been confined to a small body of soil a top-dressing is now necessary. Small but frequent top-dressings are desirable as soon as the white tips of the roots appear through the soil: a slight covering and a dusting of bone-meal should be applied. Moisture in the atmosphere, so necessary for the healthy growth of Cucumbers, must not be produced through the too liberal use of the syringe on the foliage, but by damping the walls and floor of the house, or by watering the edges of the mounds with diluted manure water at a temperature of 80°. Very little pinching will be necessary now, but the plants may be assisted in their growth by cutting all fruit as soon as they have attained the desired size. A little air may be given on bright days, but care must be taken not to lower the temperature of the house by doing so.

Asparagus.—Batches of roots should be placed in heat fortnightly throughout the winter if a constant supply is desired. This crop may be grown without fire heat, provided a hotbed is available and sufficient covering material to keep the pit crops for next season. It should be decided now where next season's crops are to be grown, so that the ground may be prepared for them as soon as possible. That intended for Onions should be trenched and made rich with well-decomposed manure. Ground trenched now and exposed to the influence of the weather through the winter will be in good condition when the time for sowing arrives. Land intended for the main crop of Peas should be treated in the same way. The same remarks apply to Cauliflower. The ground for this crop can hardly be made too rich, provided sufficient room is allowed between the plants. Root crops such as Carrots and Parsnips will succeed best on land which was manured for the previous crop, but this should be thrown up to the influence of the weather as soon as possible.

THE FLOWER GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Hertfordshire.

Hedges.—Nothing tends so much towards the general good appearance of any establishment as the formation and thorough upkeep of good hedges. To promote a free growth, the ground to be planted with a hedge should be brought into a fertile condition by thorough trenching and the incorporation with it of a good dressing of rotted manure and other suitable material. Perfect drainage is essential, and, if the natural condition of the soil does not allow of this, artificial means must be employed. Select plants of a uniform size and shape, and such as have been transplanted frequently and prepared for the purpose by the nurserymen. For the "Flower Garden" those of an evergreen character are generally preferred, as besides providing more shelter, they are attractive at all seasons, and more conspicuous, though neat in appearance. Planting of most of the subjects may now be satisfactorily carried out. Amongst material suitable for those of an evergreen nature may be mentioned *Viburnum Tinus* (Laurestinus), Privet, Holly, Yew, both the upright common English and the Golden, and Irish Yew; Box, *Cupressus* (in variety), Laurel and Thuya. Of deciduous sorts, there are Sweet Briar, *Berberis vulgaris*, Beech, Hornbeam, Black Thorn, American Thorns (such as *Crataegus Crus-Galli*), Myrobalan Plum and Lilacs. Old hedges that require renovating may now be given attention.

Perennial Asters.—The growths of these plants may now be removed to the rubbish heap or smoulder fire, and any plants that are scarce should be protected at the base from slugs, etc., by placing a handful of short cinder ashes round them. Seeds of these, which were removed when the weather was dry, and have since become thoroughly ripened, may now be sown. We consider boxes best for the purpose. They should be well crocked and filled with soil of a fine nature on the surface. Sow the seeds thickly, many of them will prove to be infertile. Cover the seed with a thin layer of the finely-sifted compost, press the soil firmly, and place the boxes in a house or frame where there is a gentle heat. Leave them there until germination has taken place, then remove them to cooler quarters. Keep the conditions moist.

Pampas Grass.—Few plants are more attractive when properly placed than the Pampas Grass. At this season of the year the plants are particularly elegant with their tall and decorative plumes. As isolated specimens on the lawn, or when planted on either side of a walk or drive, or beside water, the Pampas Grass is effective. A position sheltered from strong winds should be afforded it, otherwise the slender stems carrying the feathery plumes will be damaged and their beauty marred. Though it is practically hardy, in this cold district we generally place a mat or some protection round the plant during very severe weather.

General remarks.—The regravelling of paths and drives should now be done where needed and thoroughly well rolled. During wet weather make a good quantity of pegs, labels and sticks ready for use next season. Wash all dirty pots and thoroughly clean out the sheds. Overhaul the tools, and do any work of this nature that is possible.

FRUITS UNDER GLASS.

By B. GOODACRE, Gardener to Sir ERNEST CASSEL, G.C.B., Moulton Paddocks, Newmarket.

Cherries.—To obtain ripe Cherries in April it is necessary to close the house containing the trees as soon after the present date as possible. Before this is done, however, the structure should be cleansed thoroughly, the trees pruned and cleaned, and everything inside the house made sweet and wholesome. If pot-trees are employed to produce the early crop, a thorough soaking of clear lime water may be given them when they are brought indoors. This will expel any worms which may be present and will also have a beneficial effect on the trees. Very little fire heat will be necessary for some considerable time, as the Cherry cannot stand anything in the nature of forcing. The night temperature may range from 40° to 45°, or, in severe weather, it may be allowed to drop to 35°, merely using sufficient warmth in the water pipes to keep the air-tem-

perature above freezing point. Admit air for a short time during the day whenever possible, closing the ventilators early enough to cause the temperature to rise 5° or 10° with sun heat. Damping the floors, etc., to promote atmospheric moisture will depend upon the state of the weather. The practice of damping floors and syringing trees once or twice daily in all circumstances is to be condemned, such treatment doing more harm than good on dull, cold days. Excessive moisture and low temperatures will often cause many of the buds to start weakly, besides creating a muggy, stagnant atmosphere. Syringe the trees freely on bright, sunny days at about noon, so that they may become fairly dry again before nightfall. Whether the trees are in pots or planted out, see that they are thoroughly moist at the roots when starting the house.

Early-pot Figs.—The pot trees for providing the earliest crop may now be started. If pinching and regulating the growth were carefully attended to during the growing season, little or no pruning will now be necessary. For the successful forcing of pot Figs so early in the season it is advisable to provide bottom heat, either by means of fermenting material or water pipes, the latter method being preferable, as the heat can be more easily regulated. A bottom heat of 65° to 70° will be high enough until the leaves begin to unfold, when it may be increased by 5°. The atmospheric temperature may range from 48° or 50° by night to 55° by day, increasing the temperature as growth advances, say 5°, when the leaves unfold, and gradually rising another 5° a few weeks later. Attend carefully to the supply of moisture at the roots. Here it may be said that with pots plunged in hotbeds the state of the surface soil is not always a reliable guide to its condition lower down in the pot, especially if syringing is being practised twice daily. Therefore, pains should be taken to ascertain if water is necessary before applying it. Syringe the trees once or twice daily, according to the weather, and maintain a moist atmosphere by damping floors, etc., as often as may be considered necessary.

Permanent Fig trees.—The house containing the earliest planted out trees may now be closed in order to provide a crop in succession to the pot trees. Start with a night temperature of 45°, and allow a rise of 5° to 8° by day. See that the border is in a moist condition, and apply a mulch of well-rotted horse droppings to encourage surface roots.

Later Fig-houses.—Trees in later houses may be pruned whenever the wood is mature, afterwards washing them with some safe insecticide. The glass and woodwork of the houses may also be thoroughly cleansed with warm water and soap, walls whitewashed, and everything put in readiness for starting when required.

PLANTS UNDER GLASS.

By JOHN DONOGHUE, Gardener to JOSEPH PICKERSGILL, Esq., Bardon Hill, Westwood, Yorkshire.

Begonia Gloire de Lorraine.—The earliest plants of this winter-flowering Begonia will have passed out of bloom. The inflorescences should be cut away and the plants afforded a short season of rest before the growths are shortened to about 12 inches in length. Following this pruning, they should be placed in a house having a warm, moist atmosphere, where the plants can be sprayed frequently to induce them to produce growths for the supply of early cuttings.

Begonia Gloire de Sceaux.—This Begonia is set freely with flowering buds, and the plants will provide a handsome display of bloom very soon after the commencement of the New Year. Gloire de Sceaux flowers most freely when cultivated in small pots, and afforded frequent waterings with clear soot water and diluted liquid manure from the farmyard. In the winter season, when most fire-heat has to be used, the plants are apt to be infested with thrips and aphides. These pests must be eradicated by fumigations with a nicotine vaporising compound.

Perpetual flowering or tree Carnations.—At the present season these sweetly-scented, brightly-coloured flowers are more appreciated than at any other time. The variety *Carola* is a most welcome sort on account of its delicious

clove scent and its richly-coloured flowers. Let the plants have constant ventilation that the growths may not become sappy, or the buds for providing spring flowers will be very weak. In respect to such varieties as the grower desires to increase, but of which the number of cuttings is limited, the very first opportunity should be taken to insert what cuttings can be obtained, although this may have to be done at the expense of some flowers. After the first batch of flowers has been cut, the lateral shoots should be looped up to the central stake, and each plant exposed as much as possible to the influence of light. The roots should be given a top dressing, at intervals of a week or 10 days, with Clay's Fertiliser, or some other approved chemical manure. In no case must the quantities recommended by the vendors of these concentrated manures be exceeded.

Souvenir de la Malmaison Carnations.—It is still possible to cut a few excellent blooms from the spring batch. The plants should now be kept as cool as possible, without allowing them to suffer from frost, therefore admit ventilation on all favourable occasions. The interior of the structures must be kept as dry as possible. Examine the plants frequently with a view to watering any which are really needing moisture, remembering that the roots should be kept on the dry side, but also that excessive dryness will be just as injurious as over-watering. Any specimen plants which have not been staked should be given attention at once. If the rust fungus is present on any of the plants, the worst of the leaves should be pinched off and burnt, and the remaining ones treated with a brush dipped in a fungicide, taking care not to miss any of the affected parts. This season's layers now growing in pots 6 inches in diameter will need but little further attention at present beyond supplying them with a stake for supporting the centre growth. Keep the plants in a light, well-ventilated structure and water them with care.

THE HARDY FRUIT GARDEN.

By A. R. SEARLE, Gardener to the Marquis of NORTHAMPTON, Castle Ashby, Northamptonshire.

Strawberry beds.—The present is a suitable time for preparing land intended for the planting of Strawberries next year. The ground should be thoroughly trenched, incorporating plenty of farmyard manure as the digging proceeds, also a liberal dressing of soot, which will not only be beneficial to the plants, but will also assist in destroying insect pests. The surface of the ground should be left in as rough a condition as possible, so that it will be exposed to the full influences of the weather. Many advantages are gained by preparing the ground early, for not only is it more exposed to the influences of frost and air, but, in addition, the manure becomes well decayed and incorporated with the soil, so that the latter settles again before planting time arrives, for Strawberries, in addition to being gross feeders, delight in a firm rooting medium. But the ground need not remain idle in the meantime, for good crops of Early Peas may be obtained from it in time to allow it to be made clean and tidy before putting out the Strawberry plants, which should be done during the latter part of August or the beginning of September. After the ground has been cleared of the haulm of the Peas and weeds, it will only be necessary to lightly point over the surface with a fork just previous to planting the Strawberries.

Wall trees.—The work of pruning wall trees should be pushed on as fast as possible, but the training and refastening of the shoots of Peach and Nectarine trees should be deferred as long as possible, in order to retard the flowering period, and thus minimise the danger to the blossom from late spring frosts. After pruning and cleansing the trees thoroughly, tie the branches together in loose bundles, which must be securely fastened to the wall, or, better still, to temporary stout stakes, so placed as to hold the shoots away from the wall.

General work.—See that all newly planted trees are properly staked and securely fastened. Use pieces of felt or sacking around the stake and tree, so that the ligatures or stake will not cause the bark to be chafed. All newly-planted trees should be mulched at once with long stable litter as far as the roots extend, to protect them from severe frosts.

EDITORIAL NOTICE

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, as well as specimens of plants for naming, should be addressed to the EDITORS, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Illustrations. The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c., but they cannot be responsible for loss or injury.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editors to see.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, DECEMBER 12—
United Hort. Ben. & Prov. Soc. Com. meet.

TUESDAY, DECEMBER 13—
Perpetual-flowering Carnation Soc. Exh. at R.H.S. Hall, Westminster; Annual meet. at Anderton's Hotel, Fleet Street, 8 p.m.

THURSDAY, DECEMBER 15—
National Sweet Pea Soc. Annual meet. at Hotel Windsor, 3 p.m. Conference at 7 p.m.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich—40.4°.

ACTUAL TEMPERATURES:—
LONDON.—Wednesday, December 7 (6 p.m.): Max. 51°; Min. 43°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, December 8 (10 a.m.): Bar. 29.3; Temp. 49°; Weather—Dull.

PROVINCES.—Wednesday, December 7: Max. 51° Cornwall; Min. 43° Yorkshire.

SALES FOR THE ENSUING WEEK.

MONDAY—
Dutch Bulbs, at 11; Roses and Plants, at 1.30; at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

TUESDAY—
Dutch Bulbs, at 11; Roses, at 1.30; Palms and Plants, at 5; at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

WEDNESDAY—
Miscellaneous Bulbs and Roots, at 12; 2,996 cases Japanese Liliums, &c., at 2.30; at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

FRIDAY—
Imported and Established Orchids, at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.45.

The Japanese Creeper and the Virginian Creeper.

In the whole world, there is probably no cultivated trailing or climbing plant that covers so much space as the Japanese Creeper does in this country, though it was introduced no longer ago than in 1868, or nearly 250 years later than the Virginian Creeper, of which it has become a most successful rival. It flourishes in all aspects, at least in the south of England, and equally well inland or facing the sea, where it is within the influence of a salt-laden atmosphere. Whole streets of houses, especially the newer ones, are often more or less covered by it, and individual plants sometimes spread very widely, even more widely, perhaps, than the more robust and woody Wistaria; but on this point we have no exact data. The largest Japanese Creeper that has come under our observation exists at Worthing, in the Steyne Road, skirting the west side of the Steyne Gardens, which face the sea, with only a road and promenade between. The houses in the Steyne Road have an eastern aspect, and are more or less shaded by tall trees in the gardens opposite. They are houses of four stories and basement, with an area or merely excavations for the windows, such as the one from which the big creeper starts. The plant in question was placed in position 22 years ago in a flower-pot. Eventually the growing plant burst the pot, and then the owner had a brick receptacle built for it against the wall of the house. This is 2 to 3 feet across and about

as much above the public pavement outside. Thus situated, very little water could reach the roots of the plant naturally, but it was watered very copiously during the earlier years of its existence. The result is that it now covers, more or less, the front of five private houses and the side of the hotel, which is at the end of the street and faces the sea. The extensions are not quite equal, that in the northern direction being somewhat the greater. We estimated the total horizontal extensions at 50 yards, but that can only be accepted as a rough approximation. The very short main stem may be 6 inches in diameter, and it is divided into five unequal secondary stems almost close to the ground. After leaving the first house, the growths are mostly above the first-floor windows, reaching the eaves in the central part and completely covering many of the windows of an unoccupied house. In September of the present year there was a profusion of flowers on the stems and older branches.

Thus much concerning the remarkable Worthing specimen of the Japanese Creeper; but, before leaving the subject, we may refer to some peculiarities observed in the direction taken by the growths of this plant. Usually, a young plant against a wall develops a fan shape, filling up later the vacant space below. Sometimes all the branches grow obliquely, either to the right or the left, apparently uninfluenced by light or aspect or clear space. Sometimes the extensions are all horizontal, with dips downwards. A very striking instance of this may be seen at Kew. About a dozen years ago a portion of the residential part of the Herbarium buildings was pulled down, in consequence of its proximity to the main building and the danger of fire arising therefrom. This left a large expanse of naked wall facing west. On the south front of the building there was a Japanese Creeper in a losing competition with Ivy. It soon turned the corner and spread horizontally over the whole face of the bare wall, from the ground to the roof; but the Ivy seems to have made no effort to extend in the same direction. What the influences are that control these physiological phenomena it is difficult to determine.

The Japanese Creeper was distributed in cultivation by Messrs James Veitch & Sons in 1868 (*Gardeners' Chronicle*, 1869, p. 838), under the name of *Ampelopsis Veitchii*, having been introduced by John Gould Veitch, and this name it will probably bear to the end of time; for gardeners do not like changing the names of their plants. The species had previously been described as *Ampelopsis tricuspidata*, and there are botanists of repute who maintain that, whatever the generic name should be, *tricuspidata* is the proper specific name. Unfortunately, there is great divergence of opinion on generic limits in the Vitaceæ, and different writers severally refer the plant to *Ampelopsis*, *Cissus*, *Vitis*, *Quinaria* and *Parthenocissus*, whilst the obscure name, *Psedera*, has recently been revived. It would serve no useful purpose to give the full synonymy here, but it may be mentioned that *Parthenocissus tricuspidata* is the name adopted by the late Dr. Planchon, the accomplished author of the only recent monograph of the whole of the Ampelidaceæ, otherwise Vitaceæ.

The exact date of the introduction of the Virginian Creeper is not known. Parkinson has a note on it on the last page of the descriptive part of his *Paradisus* (1629) under the name of *Hedera quinquefolia*. He is not at all enthusiastic about it, and includes it "because it adds to the number of plants in cultivation." However, he recognises its value as a town plant of rapid growth, attaining as much as 20 feet in one year, and climbing to the top of the highest chimneys; nor has the famous Philip Miller, writing about a century later, much to say in its favour. This vine also has a copious synonymy, and is the *Parthenocissus quinquefolia* of Planchon.

The Virginian Creeper, it may be added, has an unusually wide geographical distribution, ranging from Canada to Florida, Texas, Mexico and Cuba, and from the Atlantic to the Rocky Mountains.

LINNEAN SOCIETY.—A meeting of the Fellows of this Society will be held on Thursday, December 15, at 8 p.m., when the following papers will be read:—(1) "Reports on the International Botanical Congress at Brussels, 1910," by Dr. OTTO STAFF, F.R.S., and others; (2) "Non-calcareous Sponges from the Red Sea. Collected by Mr. Cyril Crossland," by Mr. R. H. W. ROW, B.Sc.; (3) "Comparative Anatomy of Leaves of *Veronica*," by Mr. R. S. ADAMSON.

THE SURVEYORS' INSTITUTION.—The next ordinary general meeting, being the first of the two afternoon meetings arranged for the convenience of country members, will be held in the Lecture Hall of the Institution on Monday, December 12, at 4 p.m., when a paper will be read by Mr. ROBERT M. D. SANDERS, entitled "The Organisation of Agricultural Credit under Land and Local Credit Societies."

THE LEAMINGTON FLOWER SHOW, 1911.—This show, which we mentioned last week, will be held on July 26 and 27, not July 28 and 29 as stated.

INTERNATIONAL AGRICULTURAL CONGRESS, MADRID, 1911.—The Board of Agriculture and Fisheries are informed that the 9th International Agricultural Congress will be held at Madrid from May 1 to May 6, 1911, under the distinguished patronage of His Majesty the KING OF SPAIN. In accordance with the decision of the last congress held at Vienna in 1907, the congress at Madrid will be divided into eight sections, and the subjects to be discussed will include the organisation of co-operation and agricultural credit, re-forestation, diseases of fruit trees, animal nutrition, and the application of new manures. Societies or private persons can participate in the Congress, the subscription for each person or representative being 20 pesetas (or approximately 16s.). Applications for admission, which must be made before March 15 next, should be addressed to the Secretaries of the Organising Committee of the Congress, at the offices of the Society of Spanish Agriculturists, 12, Campoamor, Madrid.

CLARKIAS AS HONEY PLANTS.—A note in the current issue of *Die Gartenwelt* (xiv., 47) advises bee-keepers to plant Clarkias in their gardens. Owing to the plentiful supply of nectar in their flowers, *Clarkia elegans* in particular is recommended as a honey-plant, and to a lesser extent *C. pulchella*. It should be noted that the single-flowered plants are more suitable for this purpose than the doubles, since the former contain more honey and also more pollen.

THE WATER REQUIREMENTS OF PLANTS.—

All gardeners know that the amount of water absorbed by plants from the soil and given off in the form of vapour by the leaves is very considerable, though few probably could offer a precise estimate of the total amount of water which thus passes through a plant during its growing period. Hence the numbers quoted by Dr. RUSSELL in an article on Agriculture in the Dry Regions of the British Empire (*Nature*, November 24, 1910) may be of interest. In

of one pound of dry matter, 480 lbs. of water were found to pass through the plant in the case of Barley growing on manured soil, whereas no less than 680 lbs. of water was transpired in the case of plants growing on unmanured soil.

A TREE FOR PLANTING IN NARROW STREETS.

—So long as narrow streets are tolerated and so long as only large growing trees are used for street-planting, the narrow streets will remain

those of the species, and have the essential merit of remaining on the tree till late in the autumn. The variety, moreover, bears transplantation well.

INCREASED TREASURY GRANT FOR UNIVERSITY EDUCATION.—All interested in higher education have read with appreciation the announcement of the Chancellor of the Exchequer that the grants to universities and university colleges are to be increased by £50,000 per annum. It is the custom to grumble at the somewhat



FIG. 181.—LÆLIO-CATTELEYA OLIVIA: SEPALS AND PETALS, SOFT PINK; LIP, ORANGE-COLOURED, WITH ROSE SHADING AT THE MARGIN.

(See p. 425.)

Barley the amounts of water which are absorbed and transpired in the course of the production of one pound of dry matter have been estimated variously as 257 lbs. (Lawes & Gilbert, Rothamsted, 1850); 774 lbs. (Wolley); and 393 lbs. (King, Wisconsin, 1894). The most recent measurements, those of Mr. J. W. LEATHER (Pusa), are of particular interest in that they were made both on plants growing in manured and in unmanured soils. During the formation

tree-less. It is therefore desirable that search should be made for trees suitable for planting in the less-spacious of our thoroughfares. From an account given in *Möller's Deutsche Gärtner-Zeitung* (No. 46, 1910), by Mr. G. FRAHM, it appears that *Ulmus montana* var. *Gaujardii* is singularly well adapted for planting in streets where space is limited. This variety forms a slender, tapering stem and bears a pyramidal head; the leaves are bright green, somewhat smaller than

grudging support given by the Treasury to the cause of university education; but when it is remembered that the principle of State aid for university education has been admitted but comparatively recently in this country, the friends of higher education have reason to congratulate themselves on the fact that Chancellors of the Exchequer of both political parties have recognised in practical manner the claims of University education for increased financial support.

NOVEMBER RAINFALL IN ABERDEEN.—A table, compiled by Mr. DAVID McHARDY, of Cranford House, Aberdeen, shows that the rainfall in that city during the month of November was 5.98. This amount has only once been exceeded in the past 11 years, namely in 1905, when it was 6.83.

ASSOCIATION OF EDINBURGH SEED TRADE ASSISTANTS.—The sixteenth annual dinner of the Edinburgh seed trade assistants was held in the Royal British Hotel, Edinburgh, on December 2, under the chairmanship of Mr. J. W. McHATTIE, City Gardener. The toast of the evening, "The Seed Trade Assistants," was proposed by Mr. McHATTIE. He impressed upon the assistants the importance of their calling and the high position the Edinburgh assistants had always taken in the trade. He pointed out that the prosperity of gardening and farming largely depended upon the efficiency of seedsmen and their assistants. Mr. W. J. THOMSON replied in a suitable manner. Mr. J. W. FORBES, advocate, proposed "The Seed and Nursery Trade." He said that Edinburgh was one of the centres of the trade in the United Kingdom, and that such a gathering as that present augured well for its future success. He coupled the toast with the name of Mr. WELSH, of Messrs. DICKSONS & Co., who responded to the toast. The evening concluded with a splendid entertainment of songs and recitations.

POTATOS IN 1910.—The preliminary statement as to produce of crops, issued by the Board of Agriculture, estimates that the acreage under Potatoes in Great Britain was 539,684 as compared with 575,461 in the previous year. The yield per acre in 1910 is estimated at 6.45 (England 6.55, Wales 5.11, and Scotland 6.42), which yield is not far short of 10 per cent. better than the decennial average (5.93). As a result of the reduction of acreage the total crop is smaller by 200,000 tons than that of 1909, and nearly half a million tons less than 1908. Having regard to these facts and also to the poor crop in France, it will not be surprising if Potatoes show an advance in prices during the next two months.

HONOUR FOR DR. T. DURAND.—By Royal decree, dated November 24, Dr. TH. DURAND, Director of the Brussels Botanical Gardens, was promoted to the rank of Officer of the Royal Order of the Crown of Belgium, and his daughter HELENE was appointed Chevalier. We offer our congratulations to both recipients. Many of our readers know that Dr. DURAND has given much time to a study of the Tropical African flora. So far back as 1884, he published *Reliquia Lecardianæ*, in 1895 the *Conspectus Flora Africae*, in 1896 *Etudes sur la Flore de l'Etat Indépendant*, articles that were followed by many others. He also gave some excellent lectures last winter before the Royal Academy of Belgium, the Royal Linnean Society of Brussels, and the Belgian Society of Colonial Education upon the botanical explorations in the Congo. Respecting these lectures, the Baron VAN ETVELDE, former Secretary of State for the Independent State, the founder of the *Annales du Musée du Congo*, wrote to Dr. DURAND, saying, "What a grand scientific harvest our countrymen have had in the Congo! I am proud of it, and I gratefully remember the patriotic devotion and lofty scientific spirit with which you have directed and rendered their work fruitful." Miss HELENE DURAND early in life showed a remarkable artistic talent in scientific matters. In 1903 she won the silver gilt medal for her Orchids exhibited at the Ghent Quinquennial exhibition, which proved, as Count OSWALD DE KERCHOVE DE DENTERGHEM said, that the artist "united the talent of the painter with the knowledge of

the botanist." In 1905 she drew the much admired plates for the paper by Mme. BOMMER and M. ROUSSEAU on the fungi of the Antarctic expedition of the "Belgica," then a series of entomological and botanical plates for the *Annales du Musée de Tervueren*, and others which were published in the leading foreign scientific periodicals. Miss HELENE DURAND is her father's devoted co-worker, and it will be remembered that last year the Royal Academy of Belgium awarded substantial honours to their work, *Sylloge Floræ Congolanae*.

APPLE SCAB.—The current number of the *Zeitschrift für Pflanzenkrankheiten* (Journal for Plant Diseases) contains some interesting observations by Dr. VOGES on Apple scab (*Fusicladium dendriticum*). Dr. VOGES is strongly of opinion that the chief danger of reinfection in successive seasons lies in the hibernation of the fungus in young shoots, a view in which he will be supported by British mycologists, who have often called attention to this matter. VOGES, however, thinks that winter spraying is of little use in controlling this fungus, because the fluid cannot come into contact with the bulk of the resting mycelium in the scabbed shoots. He urges that spraying for this fungus should be practised only during the spring. It is noteworthy that SALMON, in his address at the Hexham Fruit Congress, advocates spraying in February as well as during the spring (see p. 353). It would be interesting to have clear evidence of the value of the earlier spraying, i.e., one would like to know how a part of an orchard sprayed only in the spring compares with the remainder of the same orchard sprayed both in February and in the spring. Of course, the plan of pruning away shoots affected by scab has been suggested before, and has also been denounced as impracticable, but in orchards which are badly infested by scab year after year it would certainly seem that the expense of removing scabbed twigs would not be too much in comparison with the benefits conferred. CLINTON, an American writer, considers that great danger of reinfection during the spring lies also in the production of spores belonging to a higher stage in the development of the fungus. These spores are produced in the leaves which remain lying on the ground. One does not yet know how abundant is this stage in our own country, but at any rate spraying an orchard in the winter would have little influence in preventing the formation of these spores. If it is found that the higher stage of the fungus is of frequent occurrence, collection and destruction of the decaying leaves will become necessary. In the article referred to at the commencement of these notes, Dr. VOGES controverts the idea that the scab fungus is unable to enter the fruit except through a wound. He also makes some observations on certain varieties of Apples and Pears which are less susceptible to scab than others, and mentions the interesting fact that red-skinned varieties of Apples are relatively immune from the attacks of this devastating pest.

PUBLICATIONS RECEIVED.—*Flora of Jamaica*, by William Fawcett and Alfred Barton Rendle, Vol. I. (London: Natural History Museum, Cromwell Road.) Price 10s. 6d.—*Gardening in the Tropics*, being a sixth edition of *Gardening in India*, by G. Marshall Woodrow. (Paisley: Alexander Gardner.)—*Bulletin of Miscellaneous Information*, Royal Botanical Gardens, Kew. Appendix I, 1911: Contains list of seeds of hardy herbaceous plants and of trees and shrubs for exchange with botanic gardens and with regular correspondents of Kew. (London: Darling & Son, Ltd.) Price 1d.—*The Development of British Forestry*, by A. C. Forbes. (London: Edward Arnold.) Price 10s. 6d.—*The Art of Publicity*, by Ernest A. Spiers. (London: T. Fisher Unwin.) Price 5s. net. This volume is intended to assist advertisers in regard to the selection

of the best media for advertising. It discusses the merits of bill-posting, advertising in periodicals, field advertising, circularising, and other forms of obtaining publicity.—*The "Borough" Pocket Guides: Richmond, Surrey*, No. 418. (Cheltenham: Edward J. Burrow.)—*The Melbourne Argus*. Tables of the Australasian Mails for 1911. (London: Australian Press Association, 80, Fleet Street.)—*Macmillan's Monthly List of New Books*, December, 1910.—*Annual Report of the Bureau of Industries, for the Province of Ontario, 1909*. (Toronto: Ontario Department of Agriculture.)—*Department of Agriculture, Trinidad*. Special Bulletin. (Annual). (Trinidad: Government Printing Office, 2, Victoria Avenue, Port of Spain.)—*Report of the Department of Agriculture and Immigration for the year ending December 31, 1909*. (Winnipeg, Manitoba: James Hooper.)

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

WHITE ROSES.—The contributor to the Rosary (see p. 410) when writing of white Roses, states that the variety Frau Karl Druschki was distributed in 1901. So I always thought. But the N.R.S. Catalogue says 1900. How do these discrepancies occur? I feel sure that the first we heard of the variety was in the summer of 1901 when King Edward admired it at one of the London shows. This happened before King Edward's coronation but after the death of Queen Victoria. Lady Quartus Ewart is a strong-growing, white Rose of the first excellence, and Mrs. Allen Chandler and Mme. Lacharme are to be recommended. F. Kitley.

MONTBRETIAS.—Among the notes on the culture of these generous plants, I do not observe any mention of their excellence for naturalisation. Planted out in the grass or by woodland walks, Montbretia Pottsi and its vigorous varieties take care of themselves, and, to my mind, are far more decorative in such places than in the borders. They grow luxuriantly, but do not get so crowded at the roots as to flower less freely, which is their decided tendency in garden soil. They seem to benefit by competition with grass and other wild growth, and, with me at least, rabbits do not attack them. A woodland dell planted with Montbretias, Aconitum autumnale, Lysimachia clethroides, and Funkia Sieboldii is a beautiful sight in late summer and autumn. Antholyza paniculata takes equally kindly to wild life, and develops rich colouring in October. These notes apply to a cool soil and moist western climate. Herbert Maxwell, Monreith. ☾

—In your issue for December 3, p. 416, Mr. Johnson refers to my advice respecting lifting and storing away the bulbs for the winter. Many years ago, when I knew but little about Montbretias, the whole of our stock here was completely killed through leaving them in the ground during the winter months. Ever since, I have made it a practice to lift them after the growth is well ripened and store them away in a place of safety till the spring. I am convinced that the extra labour incurred by this practice is more than repaid, especially on wet, retentive ground. Even in situations where they survive if left in the ground, I have often observed that they make a thick mass of growth and small spikes with few flowers, compared with those which are lifted annually and replanted in the spring. On the same page, Mr. E. H. Jenkins mentions the plan adopted by Mr. Davison, of Westwick Gardens, and probably no man has achieved greater success with this class of plant than Mr. Davison, both as to their culture and the raising of new varieties. I have had the pleasure of visiting these renowned gardens, and I must confess I have never seen Montbretias so well cultivated anywhere else. E. Beckett.

SCARCITY OF ROSE FLOWERS ON THE RIVIERA.—Mr. Woodall writes me that owing to the terrible drought, Rose flowers, usually sold at 8 francs and 10 francs per 100, are now selling at 36 francs per 100. The country is now having plenty of rain, which is much needed, but the rains are spoiling the effects of the autumn gardens. Georg. Paul.

HOME-GROWN AND COLONIAL APPLES.—It is difficult to avoid a feeling of regret that such a superb collection of home-grown Apples as was presented at Vincent Square on November 22 from Kent could not have been staged at the Colonial Fruit Show held recently in the same hall. From the examples of Apples exhibited from British Columbia, Nova Scotia, or other parts of Canada, the British visitors, and Colonial ones also, may infer that we cannot grow Apples at home. Why is not the great exhibition of Home-grown Fruits held in October advertised as widely as are these Colonial Fruit Shows, and why not have a member of the Ministry to open the home show as Sir Edward Grey was advertised to open the Colonial show? No greater misfortune to home fruit culture could well happen than that consumers should conclude that home growing of fruits is played out, and that we have to depend on Colonial growers generally for our Apple supplies. It is in the matter of quantity but not quality that our Colonies beat us. With them land is cheap, and is not given over to myriads of useless purposes as so much of our good land at home now is. Colonel Borton's Apples were grown in a comparatively small garden. What we need is that such Apple gardens should be multiplied by the thousand. Then fruit growers at home would be fully able to compete with produce of the most highly-favoured Colonies. Of Apples, we grow too few high-class varieties, and of the low class far too many. In that respect we may well set our own house in order, and influential encouragement may well conduce to great fruit-growing reforms in this country. D.

WASPS.—How advantageous it would be to gardeners and fruit-growers if these destructive insects could be destroyed. For many years past they have spoiled nearly half our choice fruits. During the present autumn, when the sun blinds were taken down from the residence here, no fewer than 10 queen wasps were found in them. And yet not a single nest was seen in this locality. Where could they all have come from? Is it they never made their nests, owing to the wet season? J. Johnson, *The Lodge Gardens, Halesworth.*

SOCIETIES.

ROYAL HORTICULTURAL.

DECEMBER 6.—The last meeting of the year provided only a moderate exhibition. The big collection of Apples shown by British Columbia at the Colonial Exhibition remained on view, and there were one or two other exhibits from that show, so that the hall was fairly well filled. Apart from these, Orchids and Begonias constituted the more important displays. The FLORAL COMMITTEE granted three Awards of Merit—two to Chrysanthemums and the other to a form of Begonia Gloire de Lorraine. The ORCHID COMMITTEE granted four Awards of Merit and three Botanical Certificates.

There was little before the FRUIT & VEGETABLE COMMITTEE, and no award was made by this body to a novelty.

At the afternoon meeting in the lecture room Mr. HERRMAN SEAN gave a lecture on the "Cooking of Vegetables."

Floral Committee.

Present: Henry B. May, Esq. (in the Chair); and Messrs. Charles T. Drury, T. W. Turner, Jas. Walker, John Green, J. W. Barr, W. J. Bean, G. Reuthe, J. F. McLeod, C. R. Fielder, W. Bain, H. J. Jones, Charles Dixon, J. T. Bennett-Poë, Charles E. Shea, James Hudson, W. P. Thomson, W. A. Bilney, Wm. J. James, E. A. Bowles, R. C. Notcutt, R. W. Wallace, Herbert J. Cutbush, John Jennings, W. B. Cranfield, James Douglas, and E. H. Jenkins.

Messrs. T. ROCHFORD & SONS, Broxbourne, staged 18 large baskets filled with forms of Begonia Gloire de Lorraine; some delightful bunches of Lily of the Valley, and varieties of Codieums (Crotons). The Begonias resembled large bushes of flowers, several plants being employed in each basket, and arranged so as to present a cone-like mass of blossoms. The varieties were Rochford's Masterpiece, having bright-rose flowers, and vigorous growths; alba grandiflora, rather purer white than Turnford Hall,

which was also included in the collection; amabilis, with larger flowers than the type and very strong flower stems; Rochford's variety (new) and Rothschild's variety, a finely-coloured flower and compact grower. (Silver Flora Medal.)

Messrs. W. CUTBUSH & SON, Highgate, staged a miscellaneous collection of greenhouse flowering and foliage plants suitable for indoor decorations. Ericas were well flowered; small Orange trees were laden with their golden fruits, Skimmias, and other shrubs were bright with scarlet berries, and besides these was a large assortment of Palms, Ferns, Arahias and Dracenas. This firm also exhibited a showy group of perpetual-flowering and other types of Carnations, having large sheaves of such popular sorts as Enchantress, May Day, White Perfection, Beacon, Lady Elphinstone (new, a rich shade of pink), Mrs. Fortescue and Afterglow. Novelties included several perpetual-flowering varieties of the Souvenir de la Malmaison type, of which King George (scarlet), Viscountess Goshen (rose pink), and Lady Miller (flesh tint) were remarkably effective. (Silver Banksian Medal.)

Messrs. JAS. VEITCH & SONS, LTD., Chelsea, again showed their beautiful varieties of winter-flowering Begonias, some as basket plants, for which system of culture they are eminently suited, and especially the pink-flowering variety Agatha. The same firm showed pot plants of Chrysanthemums, heavily-fruited trees of Citrus species, and varieties of Bouvardias. (Silver Flora Medal.)

Messrs. H. B. MAY & SONS, The Nurseries, Edmonton, filled a large table with greenhouse flowering plants, Codieums (Crotons), and Ferns. The exhibit was very attractive; the flowering subjects comprised bright batches of Begonias, Primula Sieboldii and Euphorbia pulcherrima (Poinsettia), these being interspersed with varieties of decorative Ferns. All the plants were well grown specimens. (Silver Flora Medal.)

Mr. L. R. RUSSELL, Richmond, Surrey, again made an attractive exhibit with pot plants of Golden and Silver-leaved Iyies, Eleagnus in variety, Aucubas, Eurya latifolia, golden-leaved Box, Ligustrum coriaceum, Osmanthus purpureus, Cupressus macrocarpa lutea and an assortment of berried shrubs. Silver Banksian Medal.)

Mr. FRANK LILLEY, Les Hôches, Guernsey, showed varieties of single Chrysanthemums, including the new variety Strawberry.

A selection of Chrysanthemums was also displayed by Messrs. W. WELLS & CO., LTD., Merstham. Crimson Jewel (single, bronzy-red, tipped with gold), Lady Funness (see Awards), Caledonia (a large pink single variety) and R. F. Felton (a yellow decorative kind) are varieties worthy of special notice. Silver Banksian Medal.)

Bronze Banksian Medals were awarded to two exhibits of floral paintings exhibited by Mrs. OUGH, Streatham Common, and Miss FARRER, Burlington Gardens, respectively.

AWARDS OF MERIT.

Chrysanthemum Mrs. Gilbert Pringle (Japanes).—A very large creamy-white bloom, resembling the variety Mrs. Norman Davis, but larger. One of the flowers exhibited measured 2 feet 5 inches in circumference and nearly 1 foot in depth. The petals are of good substance. The variety promises to make a first-class exhibition Chrysanthemum.

Chrysanthemum Lady Funness (single).—This is a late flowering variety of the exact colour seen in Mary Richardson, a shade of terra-cotta on a yellow ground. Both these were shown by Messrs. W. WELLS & CO., LTD., Merstham.

Begonia Gloire de Lorraine Rochford's variety.—A finely-coloured form of this well-known Begonia, the shade in the young blooms being rose-red. It is the nearest approach to the "Red Lorraine" desired by cultivators. Shown by Messrs. T. ROCHFORD & SONS, Broxbourne.

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the Chair); and Messrs. James O'Brien (hon. sec.), H. Little, W. Thompson, F. J. Hanbury, A. A. McBean, C. H. Curtis, W. Cobb, J. Charlesworth, J. Cypher, W. H. Hatcher, W. P. Bound, H. G. Alexander, A. Dye, W. H. White, Gurney Wilson, J. Wilson Potter, W. Bolton, C. Cookson, C. J. Lucas, H. Ballantine, Harry J. Veitch, and Sir Jeremiah Colman, Bart.

Lieut.-Col. Sir GEORGE L. HOLFORD, K.C.V.O., Westonbirt (gr. Mr. H. G. Alexander), displayed a small selection of rare Orchids, the finest of which was the rich indigo-blue Vanda cœrulea Bluebeard (see Awards). The others were Cypripedium Pluto (Mastersii × Tracynum), the pretty yellowish flowers dotted with red lines, and the lip white with purple blotches; Cypripedium nitens Læanum var. aureum; C. Draco (Sallieri × Euryades), with handsomely blotched dorsal sepal; Lælio-Cattleya Arethusa and L.-C. Elva, both finely-flowered specimens.

Lady AUDLEY NEELD, Grittleton, Chippenham (gr. Mr. Pitt), showed Cypripedium Draco splendens.

His Grace the Duke of MARLBOROUGH, Blenheim, Woodstock (gr. Mr. Hunter), showed Cypripedium Troilus var. Lord Nelson and C. Lord Ivor (insigne Harefield Hall × Hera).

FRANCIS WELLESLEY, Esq., Westfield, Woking (gr. Mr. Hopkins), displayed Lælio-Cattleya Gwenda, a beautiful primrose-yellow-flowered form with gold veining and reddish flush on the lip; Cypripedium J. W. Mills, a delicately-tinted flower with a strong suggestion of C. insignis Sandersæ; C. Etoniense, and C. Thalia The Baron, the last having a fine, darkly-blotched flower.

W. H. ST. QUINTIN, Esq., Scampton Hall, Yorks., staged an interesting exhibit of home-raised Lælio-Cattleyas.

SAMUEL LARKIN, Esq., The Ridgeways, Haslemere (gr. Mr. Hall), was awarded a Silver Banksian Medal for an effective group of Odontoglossums, Phalanopsis Schilleriana, P. Aphrodite Kinlesidenum with distinct rose marking on the lip; Cypripedium Zeus and other Cypripediums, Cymbidiums giganteum and Wigmanum, and various Lælio-Cattleyas and Cattleyas, one unnamed seedling having very dark flowers resembling those of C. Hardyana.

Sir JEREMIAH COLMAN, Bart., Gatton Park (gr. Mr. Collier), showed a small group of rare Orchids, the noble specimen of Dendrobium speciosum nitidum gaining a well-deserved Cultural Commendation. The exhibit also included the large, pure-white Cœlogyne Mooreana, Zygopetalum rostratum, Dendrobium triflorum, Masdevallia Mooreana, M. Courtauldiana, a large form of Cirrhopetalum picturatum, Seraphyta multiflora, Calanthe Alpha, and others.

The Right Hon. Lord HILLINGDON, Hillingdon Court, Uxbridge (gr. Mr. A. R. Allan), was awarded a Silver Banksian Medal for a group of the best old form of Zygopetalum Mackayi, the plants having about 70 fine spikes of flowers.

Messrs. CHARLESWORTH & CO., Haywards Heath, were awarded a Silver-gilt Flora Medal for a group containing several new hybrids, including Lælio-Cattleya × Myrrha (L.-C. Gottoiana × C. Doxiana Rosita), a beautiful flower with gold-tinted sepals and petals flushed with rose and rosy-crimson lip with gold veining; L.-C. Bola (L.-C. callistoglossa × C. labiata), having a large flower coloured similar to labiata; and a fine yellow form of L.-C. Golden Oriole. In the middle of the group were finely-flowered plants of Vanda cœrulea, and the white form of Odontoglossum ardentissimum; at one end were hybrid Odontoglossums and Odontodas; and at the other Lælio-Cattleyas, Sophro-Cattleyas and other kinds. Other specially fine Orchids noted were Cypripedium Gaston Bultel, Odontioda Diana (C. Nozthana × O. amabile), and a number of finely-flowered plants of Oncidium prætectum.

Messrs. SANDER & SONS, St. Albans, were awarded a Silver Flora Medal for an interesting group containing several new species sent home by their collector Forget. A Catasatum from Peru had greenish-yellow flowers barred with red and an extraordinary, much-divided lip. Among Cypripediums we noticed C. Merlin var. Atlas, a fine, bold flower; and varieties of C. Læanum, C. insignis and others. Some bright Lælio-Cattleyas, including Haroldiana and Statleriana; varieties of Lælia anceps, the new white Houlettia Sandersæ, and some good Odontoglossums comprised other features of interest.

Messrs. STUART LOW & CO., Bush Hill Park, Enfield, received a Silver Banksian Medal for an effective group, at the back of which were some good plants of Oncidium, including O. varicosum, and Dendrobium Phalanopsis. Besides these, the white-flowered Cattleya Dusseldorfæ Undine, a good white form of C. labiata, a grand specimen of Cirrhopetalum Meduse, Bulbophyllum hirtum, a selection of Cypripediums, Masdevallia Lauchiana, M. tovarensis, Oncidium

ornithorynchum album, O. cheiroporum, Houlletia Sanderæ, and Grobya galeata were noticed.

Messrs. MANSELL & HATCHER, Rawdon, Yorks., received a Silver Banksian Medal for a group of excellent Cypripediums, amongst which were fine examples of C. insigne Bohnhoffianum, C. i. Sanderæ Harefield Hall, C. Hoyleanum (with a large and attractive flower), C. Leeannum Corona (with emerald-green base to the large white dorsal sepal), C. F. L. Ames, and a plant of pure white-flowered Spathoglottis plicata alba.

Messrs. J. CYPHER & SONS, Cheltenham, were awarded a Silver Banksian Medal for a group of good Cypripediums, amongst which varieties of C. Leeannum and C. Charlesianum Cypher's variety were very fine. C. Actæus Miss Carr is an attractive variety. Besides these were observed C. Thalia giganteum, C. Mme. Jules Hye, the delicately-coloured C. Actæus virginale, C. triumphans, C. Leeannum Corona, C. Minos Veitchii, and C. Vandyke.

Messrs. ARMSTRONG & BROWN, Tunbridge Wells, staged a good group, for which a Silver Banksian Medal was awarded. The best plants were Cypripedium Thalia Mrs. Francis Wellesley, still one of the most beautiful of Cypripediums, and two new and pretty hybrids—C. Captain Spender Clay (villosum auriferum ×

staged a group of Cypripediums and finely coloured varieties of Lælia anceps.

Messrs. W. B. HARTLAND & SONS, Ardcairn, Ballintemple, Co. Cork, showed Cypripedium Minos Youngii in fine condition, C. Thalia Mrs. Francis Wellesley, C. insigne gigantea, and C. Euryades splendens, the last with a finely-developed claret-red dorsal sepal tipped with white.

Messrs. JONES, HOWES & CO., Elmdon Nurseries, Kenilworth, exhibited a distinct white form of Vanda cœrulea with a violet-coloured lip.

Mons. MERTENS, Mont. St. Amand, Ghent, staged a selection of handsome hybrid Odontoglossums.

HENRY LITTLE, Esq., Baronsbalt, Twickenham (gr. Mr. Howard), showed Cypripedium insigne "Little's variety," which is a distinct form of the C. insigne Chantini class, there being a goodly proportion of white in the dorsal sepal.

Messrs. JAS. VEITCH & SONS, Chelsea, showed Cypripedium (Actæus × insigne Harefield Hall), a finely-shaped flower of good substance and markings, the upper half of the dorsal sepal being white.

RICHARD LE DOUX, Esq., Marlfield, West Derby, Liverpool, showed Cypripedium Richard le Doux (Leeannum giganteum × Prospero majus).

Cypripedium Waterloo (Mrs. Wm. Mostyn × *Ranjitsinhji*), from Mr. E. V. Low, Vale Bridge, Haywards Heath.—A handsome and distinct Cypripedium with large, white, dorsal sepal, the base being clear purple, the petals and lip yellowish, tinged with light purplish brown.

BOTANICAL CERTIFICATES.

Angræcum pellucidum, from J. S. BERGHEIM, Esq., Belsize Court, Hampstead.—A remarkable species from West Africa, Phalænopsis-like in growth, and with three long pendulous racemes of semi-transparent flowers of a cream white, tinged on the sepals with salmon colour, the lip being fringed.

Dendrobium speciosum nitidum, from Sir JEREMIAH COLMAN, Bart., V.M.H. (gr. Mr. Collier).—The plant is taller and more slender than the variety Hillii, and has numerous large spikes of cream-white flowers.

Brassia Forgetiana, from Messrs. SANDER & SONS.—The growth and individual flowers somewhat resemble *B. maculata*. The flowers are greenish-white, with chocolate bars on the sepals and petals: the crest is orange-coloured.

CULTURAL COMMENDATION

To Mr. W. H. White (Orchid grower to Sir TREVOR LAWRENCE, Bart., K.C.V.O.), for a specimen of *Lycaste costata* bearing 21 flowers.

To Mr. Bristow (gr. to Mrs. TEMPLE, Groombridge), for a plant of *Lælia anceps Amesiana* Temple's variety, bearing many flowers.

To Mr. Collier (gr. to Sir JEREMIAH COLMAN, Bart., V.M.H.), for *Dendrobium speciosum nitidum*, the plant bearing 46 flower-spikes.

To Mr. Balmforth (gr. to FERGUS MENTEITH OGILVIE, Esq., The Shrubbery, Oxford), for a fine, deep-red variety of *Odontioda Charlesworthii* with 17 flowers on a single spike.

Fruit and Vegetable Committee.

Present: G. Bunyard, Esq. (in the Chair); and Messrs. J. Cheal, A. Dean, E. Beckett, G. Woodward, J. Willard, H. Parr, A. R. Allan, H. Markham, J. Vert, P. D. Tuckett, G. Reynolds, J. Jaques, O. Thomas, W. Poupart and J. Davis.

The Chairman reminded members that at the next meeting on the 20th inst. there would be no exhibition, but that the Committee would sit as usual.

Mr. W. BAYLOR HARTLAND, Cork, Ireland, sent further samples of Apple Ard Cairn Russet from trees grown both in clay and in loam. Those from the loamy soil were the largest and best flavoured fruits.

An Apple named Best's Seedling, not unlike Rosemary Russet, was submitted for award, but the fruits were soft and somewhat shrivelled.

EXHIBITION OF COLONIAL FRUITS.

DECEMBER 1, 2, 3.—The 14th exhibition of Colonial produce, held under the auspices of the Royal Horticultural Society, was opened by Sir Edward Grey. The President, Sir Trevor Lawrence, occupied the chair, and amongst those present were the Agents-General for British Columbia and Tasmania, the Mayor of Westminster, the Hon. J. H. Turner, the Hon. Price Ellison, Sir Daniel Morris, Sir Albert Rollit, and the Rev. W. Wilks (secretary).

The list of lectures included "Cider Making," by Mr. B. T. P. Barker and Mr. J. Ettle; "Methods of Growing Fruit in the Colonies," by Mr. Henry Hooper; "The Life of a Fruit Farmer in East Kootenay," by Mr. Tormay; address to small growers, by Mr. W. Staley Spark; and "Fruit Bottling," by Mr. W. H. Plowman. Demonstrations on "The Preservation of Fruit by Drying" were given by Messrs. McDoddies at their exhibit in the Large Hall.

Taken all round, the exhibition was the most successful of the series, but it was not so representative as some of the former shows, being mainly a Canadian—and particularly a British Columbia exhibition. The displays from British Columbia so surpassed all others that without them the exhibition would have been quite commonplace. It was a magnificent effort (see fig. 182), intended to show what can be done by that part of the Dominion in the way of fruit culture, and in Apple-growing especially. Gardeners all over the country have had an opportunity recently of seeing what



THE COLONIAL FRUIT SHOW.

[Photograph by W. J. Vasey.]
FIG. 182.—PORTION OF THE BRITISH COLUMBIAN EXHIBIT.

Fairrieannum) and C. Mrs. Spender Clay (Actæus Drewett's variety × Fairrieannum), C. Germaine Opoix Westfield variety was shown well, also C. Niobe Westonbirt variety, C. Euryades splendens, C. Thalia giganteum, and C. vexillarium superbum.

Messrs. STANLEY & CO., Southgate, staged a small group, which included *Cologyne fuscens*, Cypripedium Minos Youngii, C. Mme. Jules Hye, C. insigne Brilliant (with fine, bright-reddish-purple markings), C. insigne Harefield Hall, and a promising white variety of *Cattleya labiata*.

Mr. E. V. Low, Vale Bridge, Haywards Heath, staged a small group, the principal plant in which was the new Cypripedium Waterloo (see Awards). Others noted were C. Earl of Tankerville, some good seedling Cypripediums, and the scarlet-coloured *Sopbro-Cattleya Doris*.

R. G. THWAITES, Esq., Chessington, Christchurch Road, Streatham (gr. Mr. J. M. Black), showed a selection of hybrids, including three of his beautiful white-petalled strain of *Cattleya Mary de Wavrin* (with handsome purplish-rose and gold-veined labellums), the pretty rose-red *Sopbro-Cattleya Wellesleyæ perfecta*, and two good plants of *S.C. Saxa*.

Messrs. J. & A. A. McBEAN, Cooksbridge,

R. BROOMAN-WHITE, Esq., Arddarroch, Garelochhead, sent a good example of the original form of *Oncidium sarcodes* and cut spikes of *Odontoglossums*.

AWARDS.

AWARDS OF MERIT.

Vanda cœrulea Bluebeard, exhibited by Lieut.-Col. Sir GEORGE L. HOLFORD, K.C.V.O., Westonbirt (gr. Mr. H. G. Alexander).—The flowers of this striking variety are almost circular, broad in all the segments, the tone is a clear indigo-blue, with a little white showing between the veining. The lip is coloured dark-violet.

Odontoglossum Rouge Dragon (*Phoebe* × *ardentissimum*), from W. R. LEE, Esq., Plumptre Hall, Heywood, Lancashire.—A showy hybrid, the flowers being heavily blotched with deep reddish-crimson; the tips of the sepals and petals and the lip show the influence of *O. cirrhosum*, obtained through *O. Gladys*.

O. Ceres Plumptre Hall variety (*Rossii* × *Rolfæ*), from W. R. LEE, Esq.—The largest and best variety of this pretty hybrid, the broadly-ovate lip being tinged with rose and the basal halves of the sepals barred with red.

British Columbia can produce in Apples, for at the Chrysanthemum shows in London and the more important of provincial exhibitions, fine collections of Apples have been staged by the Government of this Canadian province. But on this occasion British Columbia surpassed itself. In size, no exhibit of Apples in Great Britain

Garden salesmen, and firms dealing in Colonial produce.

THE NATIONAL FRUIT AND CIDER INSTITUTE, Long Ashton, Bristol, showed samples of Cider Apples, cider juice, in various stages of fermentation, and the pomace, before and after pressing.

Mr. W. H. PLOWMAN, who delivered lectures on "Fruit Bottling" during the exhibition, showed types of bottles, old and new, sterilising apparatus, and samples of bottled fruits.

Messrs. McDODDIE, Addington Square, London, showed compressed vegetables.

AWARDS.

The principal Awards are as follow:—Gold Hogg Memorial Medal to the BRITISH COLUMBIAN GOVERNMENT for Apples; Gold Medals to the WEST INDIAN PRODUCE ASSOCIATION for West Indian produce, and to Messrs. GARCIA JACOBS, Covent Garden, for Apples; Silver Cups to Messrs. R. H. FORTUNE and J. W. COCKLE, British Columbia, for dessert Apples; Silver-gilt Knightian Medals to SALMON ARMS, British Columbia, and Messrs. GILLMAN, New Brunswick, for Apples; Silver-gilt Banksian Medals to Mrs. JOHN SMITH, GRAND FORKS DISTRICT, and VANCOUVER ISLAND DISTRICT, British Columbia, for

Apples; Silver Knightian Medals to Mr. W. H. PLOWMAN, Westminster, for sterilising outfits, and Messrs. McDODDIE, Kennington, for dried fruits and vegetables.

THE LECTURES.

On the opening day, Mr. Henry Hooper delivered an address on "Methods of Fruit Culture in the Colonies." The lecturer, a fruit-grower of long standing in the colonies and abroad, spoke from personal experience. He said, that, although it was generally believed that success in fruit growing in so many of the colonies was to be attributed to "soil" and "climate," it was due to the combined efforts of all concerned in the industry; to the uniform efficiency and thoroughness of the cultural methods employed; to the happy relations existing between science and practice in colonial horticulture; and to the paternal assistance, supervision, and legislative support of the State. "Community of interest engendered community of action."

Mr. Hooper urged the fruit-growers of England to accept the splendid object-lesson afforded them, and to build up a great fruit industry in this country by the same means adopted by our colonial kinsmen, and said that the only obstacle to the doing of it lay in the apparently constitutional disability to combine and organise which characterises the home-staying Britisher generally and the rural Briton in particular.

—On each of the three days of the exhibition, Mr. J. A. Tormey gave a lecture dealing with fruit-farming in the district of East Kootenay, British Columbia (see figs. 183, 184). Mr. Tormey's object was to direct attention to that part which, being the last of the fruit-growing districts of the colony to be supplied with irrigation facilities, is the least known, whereas it ought to be the best-known, as land there can be purchased on very favourable terms, and the local markets are the finest in British Columbia. He said that Strawberries and all bush fruits grow in profusion, whilst

Cherries, as well as Apples, especially such red-skinned varieties as Jonathan, McIntosh Red, Rome Beauty, Winesap, Wealthy and Gravenstein, will grow there in perfection. Mr. Tormey claimed that these advantages, coupled with an ideal climate, place the district in the forefront of the fruit-growing parts of British Columbia, and that East Kootenay offers the greatest opportunities to the man of small capital. Mr. Ernest H. Arnott, the managing director of the British Empire Agency (British Columbia), Ltd., who is returning to East Kootenay in March next, knows the country intimately, and will be pleased to give information to anyone who cares to communicate with him.

BIRMINGHAM AGRICULTURAL.

NOVEMBER 26-DECEMBER 1.—Potato competitions were held in connection with the 62nd exhibition of the Birmingham Agricultural Society, in Bingley Hall, on these dates. The potatoes formed an interesting feature amidst the animals, poultry, and farm produce generally, there being close upon 2,700 tubers staged in 10 classes. Generally there were seven and eight competitors in each class, but most of the principal prizes were won by Mr. W. COLEMAN, 4, Hunter Street, Buckingham, who led in the classes for twelve, six, four, two long, two round, and one dish of kidney-shaped tubers. In the class for 12 varieties the 1st prize was £5, the varieties shown by Mr. COLEMAN being Dalmeny Beauty, Provost, Scot, Mr. Bresse, Purple Perfection, Factor, Talisman, Up-to-Date, King Edward VII., Table Talk, and Queen of the Veldt. The 2nd prize was won by the Duke of PORTLAND, Welbeck Abbey, who staged very fine specimens of White City, Sherwood (new), Abundance, Windsor Castle, Superlative, and White Kidney; 3rd, Mr. J. W. NEEDHAM, Wildsworth, Gainsborough.

Mr. NEEDHAM, who was placed second for six varieties, had fine tubers of Table Talk, Up-to-Date, King Edward VII., and Factor, and also



FIG. 183.—BRITISH COLUMBIA: A SETTLER'S HOME IN EAST KOOTENAY.

has ever approached this one. Imagine 1,100 cases of Apples, most of them weighing 40 lbs. each, and aggregating about 20 tons, piled up in one huge exhibit. They were arranged tier upon tier, in half-circular fashion, reminding one of the grand orchestra at the Crystal Palace, with boxes of Apples for singers, and surmounted by a phalanx of Union Jacks and other emblems in place of the great organ. Quite one third of the Hall was required for the exhibit, and, to make it more exclusive, the space was railled off by a rustic fence, with arches as entrances. Even the Annexe at the side, where the Orchid Committee usually sits, was taken over by British Columbia for the purpose of showing visitors, by means of the cinematograph, the scenery and industries of the colony. Judging by the pictures, wonderful crops of Apples are obtained in British Columbia, and the rate of picking the fruits appeared even more wonderful! Turning to the Apples, the first thing that impressed us, after numbers, was the colour. Nowhere in this country—not even in Kent—do we produce Apples of such deep reds. There were a few sorts with clear, golden skins, but, generally, the fruits were coloured on all sides. Sometimes they were deep maroon, reminding us of a dark Tulip. A few varieties we specially noted were (red) Spitzenberg Wagner, Jonathan (very dark coloured), Ben Davis, Blue Pearmain, Gano, King of Tompkin's County, McIntosh Red; (yellow flushed with red) Winter Barrana, Rome Beauty, Red Cheek Pippin, and (yellow) Grimes' Golden, this being of fine flavour. Not a spotted or imperfectly-formed fruit was observed, not a bruised one either, so well had the packing been done. They were gathered about six weeks ago, and the time occupied in transit was just over two weeks. The Council marked its appreciation of this fine effort by having the Hogg Memorial Medal struck in gold, for the first time, as a fitting award.

Taking the other portion of the show, the next largest display was made by the province of New Brunswick, and here again the exhibit was of Apples; but the quality of the fruits was not to be compared with that of those noticed above, whilst the packing and grading left much to be desired. This colony is young in fruit-growing, but it possesses splendid possibilities in this direction, and there is a good market at hand. We were informed that the trees bear very heavily, and, where spraying and other up-to-date methods are practised, the results are remarkable. New Brunswick contains six million acres of land suitable for orchards.

DOMINICA sent Limes and other fruits of the Citrus family, but the majority were delayed in transit, and were only staged on the second day.

There were exhibits staged by shippers, Covent



FIG. 184.—BRITISH COLUMBIA: PLANTATIONS OF ONIONS, STRAWBERRIES, AND POTATOS AT EAST KOOTENAY, PRODUCING AN AVERAGE RETURN OF OVER £70 PER ACRE.

in the class for four varieties, staging Evergood and Mr. Bresse in fine condition. He was placed 2nd in the class for "any variety not yet in commerce" with Trent Cropper, a handsome, long, pebble-shaped white Potato.

Another successful exhibitor was Mr. J. NEAVESON, Eye, Peterborough, who won the 1st prize for four farm varieties, staging bulky specimens of King Edward VII., Evergood, Satisfaction, and Langworthy; the 2nd for one dish of a round variety, with Britannia; and the 3rd for six and four dishes respectively.

Mr. THOS. BANNISTER, Malthouse Farm, had the best dish of a round Potato in Table Talk.

Mr. BEN PARKER, Scotforth, secured the premier award for "any variety not yet in commerce."

Agricultural roots in competition numbered 1,100 specimens, in addition to some 60 bushels of corn.

A number of trade exhibits were staged in the gallery, a notable display being made by Messrs. E. WEBB & SONS, Stourbridge.

FRUIT CONGRESS AT WYE.

DECEMBER 2.—A Fruit-growers' Conference—in conjunction with the National Fruit-growers' Federation—was held at Wye College, Kent, on this date. About 600 persons were present, the majority being fruit farmers in the county.

In introducing as chairman, Mr. C. S. Martin, of the Toddington Orchard Co., Gloucester, President of the Federation, Mr. M. J. R. Dunstan, Principal of Wye College, announced that application had been made to the Development Commissioners for a grant to establish a Fruit Experimental Station on good fruit-growing soil in Kent.

Mr. C. S. Martin, in opening the Conference, mentioned the aims of the Federation and the useful work it had already done. He alluded to the necessity at the present time for combination among fruit-growers, and urged all those present who were not members to join the Federation.

The first subject discussed was the grading and boxing of English Apples. Mr. J. A. Raynham, Hon. Sec. of the Marden and District Fruit-growers' Association, pointed out that the older orchards had contained too many varieties of Apples, many of them unsuitable. Then, too, growers had only recently learned how to keep their Apples free from disease. Following advice obtained from Wye College he had found himself able, by the use of Bordeaux mixture, to grow during the past few years Apples free from "black spot," with the result that the Apples could be graded, and instead of fetching 3s. to 6s. per bushel as formerly now made 6s. to 10s. Most varieties should be packed in boxes in three grades; some, however, only in two. Very choice fruits of Cox's Orange Pippin, Quarrenden, and Worcester Pearmain should be packed in dozens in boxes. All boxed fruit should be distinctly labelled with an attractive label, and sent to the same buyer for several seasons—in this way a reputation was established. He expressed the opinion that in the near future all first grade Apples will be sold in boxes. His association, at its fruit show, has offered prizes for boxed Apples, and obtained good entries—13 entries in 1909 and 17 entries in 1910. His experience was that in the early part of the season it certainly paid the commercial grower to box Apples.

Mr. C. S. Smith, Lecturer in Commercial Fruit-growing at Wye College, remarked that the foreign supply of Apples arriving in boxes was teaching the English grower a lesson. The latter must either allow the foreign grower to monopolise the market, or rise to the occasion. An important fact to remember is that the grower wants non-returnable packages; English Apples should be in grocers' shops in neat packages, attractively labelled. When the Apples are being picked, they should be divided into two grades, and the best only put into boxes. These latter should be graded into three or four sizes, and properly and carefully packed on different systems, dependent on the size of the Apple; on the whole, the "diagonal pack" was preferable to the "straight pack." Wood-wool should be used at top and bottom, but it was not advisable to wrap each individual Apple in paper; the first packed layer should become the top layer of the box.

Miss J. Smith, of the Horticultural College, Swanley, mentioned that they had found it pay to box the best Peasgood's Nonesuch. The best Apples, packed by the dozen in boxes, had realised 2s. a bushel more than the same quality sold in half-sieves. On the contrary, Bismarcks when boxed had not sold for so much as

when in baskets. Mr. C. Murdoch, of Linton, near Maidstone, said that in his experience it paid to box early dessert Apples, an increase of 2s. a bushel being obtained. Mr. C. S. Martin remarked that he had found it pay handsomely to box Cox's Orange Pippin. Mr. F. Ivo Neame, of Faversham, pointed out that in British Columbia and other places legislation was employed in the form of a "Sales Act," under which Apples were graded by statute; this ensured an absolutely regular quality, and accounted for the well-known good supply and demand. He did not suggest legislation for this country, but a regular supply of well-graded Apples must be their aim. He personally, boxed all his sound Apples, both eating and cooking, with satisfactory results as to prices obtained.

Mr. E. A. Bunyard considered that the crux of the matter was the distribution of their Apples. He believed that, by boxing, growers would obtain a new and very important market by means of the grocer.

Mr. H. M. Cobb, of Higham, Rochester, reported that he found Beauty of Bath, Quarrenden, Gascoyne's Scarlet, Worcester Pearmain, and Charles Ross the best varieties to box. The boxes he used measured 19½ inches by 2½ inches by 4½ inches, with iron clasps on the corners.

Mr. T. J. Poupert, of Covent Garden, remarked that there was undoubtedly a great future for good English Apples in boxes—but not for bad ones. It was necessary that a regular supply should be sent in. Mr. Bernard Champion, fruit-grower and salesman at Covent Garden, reported that of the boxed Apples which had passed through his hands some had sold extremely well, while some had realised only the same price as when in baskets. What was wanted, he said, is for one or two big growers to stick to the game right through the season, as the big markets do not respond to "tickling."

ADVANTAGES OF CO-OPERATION.

Very interesting papers were then read by Mr. C. F. Hooper, Chairman of the Pershore Co-operative Fruit Market, and Colonel A. C. Borton, President of "Yalding Farmers, Ltd.," in which striking instances of successful co-operation among growers were given. Mr. W. Fearnside, Hon. Sec. of the Pershore Co-operative Fruit Market and Mr. W. H. Press, of the Agricultural Organisation Society, opened the discussion following these papers.

Mr. F. Ivo Neame read a paper on "Commissions for the Selling of Fruit in London and the Provinces." A drastic change in the system of selling fruit in the London markets was advocated. Dealing with the subject as a large fruit-grower, Mr. Neame pointed out the great advantage—particularly in times of glut—of fruit being sold on a percentage basis of commission instead of by fixed charges per package.

COMMERCIAL VARIETIES OF APPLES.

After luncheon, the first subject dealt with was the best commercial varieties of Apples. Mr. C. S. Smith, of Wye College, first gave his views, founded on experience as a grower in the Maidstone district. It was obvious, he said, that locality and soil must influence to a certain extent the choice of varieties. Far too many varieties were being grown at present. In his opinion, Apples could be divided into four classes: *Class 1*.—Varieties thoroughly satisfactory, which any grower may reasonably expect to be able to grow and to market with profit. In this class there were enough cooking varieties available, but there was a decided lack of dessert varieties (medium and late). For cooking: Bramley's Seedling, Lord Derby, Lane's Prince Albert, and Grenadier were selected. For dessert: Beauty of Bath and Gladstone. *Class 2* consists of varieties which are commercially suitable only in some districts, being unsatisfactory in others. In this class was placed Early Julian, Lord Grosvenor, Early Victoria, Stirling Castle (should be on crab stock and is suitable only for good soils, but is liable to "canker"), Bismarck (should be pruned hard and tipped every year), Newton Wonder (should be on Paradise stock, is apt to have "black spot" in unkindly seasons), Worcester Pearmain (tree should be thinned and kept open, is liable to "black spot," and is now showing indications of "cankering," suggesting that it is now "played out" like Wellington), King Pippin (subject to "canker" and "black spot"),

Allington Pippin (liable to be too large for dessert). *Class 3*.—Varieties which are called "commercial," but which should not be planted by the commercial grower: Wellington, Cox's Orange Pippin, Ribston Pippin, Lord Suffield, Peasgood's Nonesuch, Cox's Monna, Devonshire Quarrenden, Gascoyne's Scarlet, Warner's King, Tower of Glamis, Summer Pippin, and Ecklinville. The above are the most frequently recommended of the commercially useless varieties.

Class 4.—Varieties, of more or less recent introduction, which show promise but which are not yet completely tested. Cooking: Norfolk Beauty, Hector Macdonald, Edward VII. Dessert: Hunt's Early (ripening with Beauty of Bath), Langley Pippin, Ben's Red (flavour poor), and James Grieve (liable to "canker," perhaps due to over-manuring), the last two may prove valuable to replace Worcester Pearmain. For a late variety Baumann's Winter Reinette should be tried. The varieties Houblon, Coronation, Charles Ross, and Christmas Pearmain appear to be of no commercial value. The need for an English Apple to be produced which could compete with the Newtown Pippin was emphasised; such an Apple would put thousands of pounds into the pocket of the English grower.

Mr. George Mount, of the Canterbury Nurseries, opened the discussion by remarking that he occupied a curious position, while as a nurseryman he wanted to sell as many different varieties as possible, he was obliged to say, speaking as a commercial fruit-grower, that he had found by experience that it paid to grow only a few commercial varieties of Apples. He strongly supported Mr. Smith in the view that too many varieties were being grown. He considered that the following 12 varieties (six kitchen and six dessert) were amply sufficient to choose from. Kitchen: Bramley's Seedling, Newton Wonder, Lord Derby, Grenadier, Lane's Prince Albert, and for the sixth either Bismarck or Stirling Castle (the latter on Crab stock). Dessert: Worcester Pearmain, which was still in his opinion the best variety out of which to make money; he did not consider that in his district (East Kent) this variety was deteriorating and "cankering"; as for "black spot," he had completely cured it by spraying with Bordeaux mixture, made as recommended by Mr. Salmon, of Wye College; Allington Pippin (to be planted in the place of Cox's Orange Pippin, which is entirely unsuitable for commercial purposes), Beauty of Bath, Gladstone, James Grieve (which was good so far as it had been tested), and Miller's Seedling, a new Apple of good flavour, which already, in spite of its light colour, was coming into favour with the public, being preferred, he found, to Worcester Pearmain. Mr. Mount quoted instances of plantations on his own fruit farm, which showed how profitable Apple growing may be if the right varieties are grown. He mentioned that he was planting up 60 acres more this winter with 11 of the above-mentioned varieties. Bramley's Seedling or Worcester Pearmain could be worked on Cox's Orange Pippin.

A long and animated discussion followed. Mr. B. G. Berry, of Selling, stated that he had found Blenheim Pippin and Dumelow's Seedling (Wellington) do well in his district on half-standards. Mr. J. D. Maxted, of Littlebourne, observed that "Smith's New Ingestre" (which was reported not to crop well in the Maidstone district) did well in East Kent. Mr. B. G. Berry confirmed this, mentioning that it fetched 8s. a bushel with him.

Mr. F. V. Theobald, Vice-Principal and Entomologist at Wye College, then dealt with the damage done to fruit trees by Thrips ("Thunder-Fly"). This insect attacks the Apple, Pear, Plum, Raspberry, Loganberry, and Strawberry. The winged female Thrip enters the opening buds, and then, using its conical mouth, lacerates the buds so that the latter die soon after opening. The leaves and blossoms are also attacked in the same way; these become distorted in shape; Pear leaves become cup-shaped, and Plum leaves become curled and twisted. The Thrip then lays its eggs in slits cut in the young leaves and sprigs. The larvæ, when hatched, are pale and wingless; they feed in the blossom, and as the petals dry off feed under their shelter on the young fruit. They also feed on the anthers, style, &c., of the flower and become black; this is seen especially in the Strawberry. The laceration caused by Thrips on young fruitlets may be such that the fruitlets crack and fall prematurely, or if the

damage done is only slight, then one finds on the larger fruitlets small dark or pale areas or scars, which eventually disfigure the fruit or even completely ruin it. The larva, when mature, enters the soil and produces there a pupal stage; then the winged Thrip appears again. The winter is passed in the larval state in the earth. Spraying affects Thrips but little, because of their sheltered positions. Soil treatment in winter would seem the best way to deal with this pest.

Mr. C. S. Martin remarked that in his district Thrips had become a serious pest. Neither lime-sulphur washes, nor the soft soap and quassia wash did any good. When Plums were attacked, the blossom was given the appearance of having become double. On Black Diamond the Thrips made the Plums drop off whilst still small.

FUNGOUS DISEASES OF FRUIT.

Mr. E. S. Salmon, of Wye College, in a lecture on "Fungous Diseases of Fruit," dealt with a disease which, during the past few years, has been doing great damage to young fruit trees in certain districts in Kent and Worcestershire, particularly Plums, although Cherries and Apples are also attacked. This disease is caused by the fungus *Eutypella Prunastri*, which attacks the stems of young trees up to 10 years of age. It is not uncommon for half the trees in a plantation or orchard to be killed. Details were given of a case of a mixed plantation of Plums near Canterbury, consisting of 1,200 Victorias, 1,200 Czars, 1,000 Monarchs, and 150 Rivers. The Victorias were attacked first, and 200 died each year for four years, and about 350 in the fifth year, so that practically a clean sweep was made of all the Victorias; of the 1,200 Czars, 300 died; of the 1,000 Monarchs, 50; while none of the Rivers was attacked. By means of lantern slides, the appearance of the disease on the stem of the trees was shown; the first indications of its presence are dried-up patches followed by the appearance of clusters of minute slit-like openings, through which the spores of the fungus exude in tendrill-like coils. Sooner or later the tree dies, and then new fructifications are formed (bursting through the bark) in which the winter-spores of the fungus are found. Spraying is useless, and no cure is known; if the disease is recognised and the tree destroyed promptly (for no tree recovers) before the spores are produced, the attack in a plantation is checked, but if this is not done, the disease becomes epidemic.

The life history of the fungus which causes "black spot" or "Apple scab" was then described in detail. Instances were given of farms where the Apple crop formerly infested has been kept clean by the use of home-made Bordeaux mixture (prepared from stock solutions).

Mention was made of the discovery this autumn of the fungus *Leptothyrium* on English Apples. This fungus is the cause of the "sooty blotch" disease, well known in America. A full and illustrated account of this new disease will be given in an early number of this journal.

The results of spraying experiments were mentioned, in which the susceptibilities of different varieties of Apples to injury from Bordeaux mixture were demonstrated. Thus, under the same weather conditions and with the same mixture, the foliage of Duchess Favorite was severely scorched, while that of Warner's King remained uninjured. When a plantation of mixed varieties is sprayed with Bordeaux mixture, the grower should note its effect on the varieties. Where injury occurs, a lime-sulphur summer wash should be tried experimentally.

The remaining part of Mr. Salmon's paper, and a paper on "The Chemical Analysis of Soils and its Use to the Fruit-grower" were postponed, owing to lack of time, till the annual meeting of the National Fruit-growers' Federation, to be held in London next February.

NATIONAL CHRYSANTHEMUM.

DECEMBER 5.—A conference was held under the auspices of this Society, at the Essex Hall, on the above date. There were two sessions of the conference—one in the afternoon and the other in the evening. In addition, there was a special meeting of the Floral Committee and a small exhibition.

Exhibits of Chrysanthemums were shown by Mr. NORMAN DAVIS, Framfield Nurseries, Sussex (Silver-gilt Medal); Messrs. W. WELLS

& Co., Merstham (Large Silver Medal); Messrs. PHILIP LADDS, Swanley (Silver-gilt Medal); Mr. R. B. LEECH, East Dulwich (Silver Medal); and W. W. MANN, Esq., Bexley (gr. Mr. J. Simon) (Silver Medal).

THE CONFERENCE.

The afternoon session of the conference was presided over by Sir Albert Rolitt, LL.D., D.C.L., President of the Society.

The first paper was read by Mr. Norman Davis, and was entitled "The Culture of Japanese Chrysanthemums for Exhibition." Mr. Davis remarked that one of the principal points to remember at the commencement was the source from whence the cuttings are obtained, rather than their size; therefore, those who wished to prove successful should endeavour to procure their stock from plants which have previously given the most perfect blooms. He advised occasional resting, by planting out, as a means of building up the constitution of the plants. In order to have a perfect flower, it was first necessary to obtain a perfect plant, and, having done this, to take steps to properly mature it. Root restriction, taken in conjunction with bud formation—that is, taking care to have the pots well filled with roots by the time the flower-buds are formed—was of great assistance in the matter. Amateurs were warned against over-feeding, but a fairly rich soil was recommended for potting, in preference to poorer soil and top-dressing that might be given later. Mr. Davis stated that damping of the blooms is more often caused by immature wood and over-feeding than by external conditions. The external conditions most fatal were sudden changes in temperature. In respect to colour, Mr. Davis stated that highly nitrogenous foods were detrimental to obtaining the best results.

A discussion followed, in which Messrs. Moorman, Runciman, Stevenson, and others joined.

At this stage of the proceedings the President vacated the chair, which was taken by Mr. Thos. Bevan.

The second paper, on "The Culture of Incurred Chrysanthemums for Exhibition," was read by Mr. W. Higgs. The object of the cultivator, said Mr. Higgs, was to adopt measures, from November of one year to November of the following year, calculated to produce perfect flowers. Neglect in attending to the cuttings or the young plant was just as fatal as neglecting the blooms. The growths must be kept healthy during the summer, and at no time should they be allowed to suffer a check. The keynote to success was careful cultivation day by day throughout the whole period of growth. He had studied the points of Incurred blooms for many years, and, on looking back at the old varieties, notably the Queen family, the Princess of Wales and its sports, the Teck family, and others, it was evident that great advances with respect to size and colour had been made. Had not Japanese blood been worked into them, the varieties to-day would have been smaller and less bright in colour. As regards shape, "Queens" of 14 or 15 years ago were models of what an Incurred flower ought to be. No variety could be nearer perfection than a well-grown specimen of Lord Alcester.

A discussion followed, in which Messrs. Tyler, Moorman, Ladds, Jones, Stevenson, Cragg, and Felton took part.

EVENING SESSION.

The evening session was commenced at 6.30 p.m., Mr. Thos. Bevan in the chair. Mr. H. J. Jones read the first paper on "Methods of Exhibiting Japanese and Incurred Chrysanthemums."

Mr. Jones said that where the pointing of exhibits is not observed by judges at Chrysanthemum shows, an exhibitor who makes the most of the colour of his blooms and studies their skilful arrangement in his stand, frequently scores over his rivals having heavier flowers, but who fail to recognise the value of these arts of exhibition. No one can deny that an exhibit that is made to present a bright and attractive appearance often impresses the judges most favourably, although heavier blooms of less pleasing colour-display, and less attractively set up, are shown in competition with them.

Quality, however, should always come first. Quality should not mean size of bloom only. An exhibition Chrysanthemum bloom of good quality should be of large size, even form, of

good colour, deep in proportion to its breadth, and, when finished, of perfect contour. Therefore, when considering the methods of exhibiting Japanese and Incurred Chrysanthemums, it is of the highest importance that the foregoing points should be carefully observed.

Whilst a great deal of prejudice appears to exist in the minds of some of those who are responsible for the government and control of the leading shows in regard to exhibiting blooms on boards, those who are best qualified to express an opinion are strong in their views that blooms skilfully set up on boards enable both judges and others to see and compare the respective flowers better than by any other method now in use. By these means the quality of the blooms is apparent to everyone who can judge the value of these flowers, and growers who are exhibitors are more satisfied with the decision of the judges in such cases.

The method of exhibiting large Japanese and Incurred blooms in vases leaves much to be desired. The arrangement, in one vase, of three or five blooms, as now generally practised, is distinctly detrimental to the cultivation of the Chrysanthemums in its widest sense. The difficulty is to arrange the flowers satisfactorily. The vases that are usually provided at the shows are unsuited for the purpose, and it is next to impossible to adjust the blooms in such a fashion as to display adequately the full proportions and true character of each individual specimen. The larger the flowers, the more difficult are they to arrange effectively. A point not to be overlooked is the fact that, in encouraging the vase classes, as now constituted, the number of varieties at our exhibitions is of an extremely limited character. The leading class at the great November festival at the Crystal Palace is for 12 vases, each vase to contain three blooms of one variety, 12 varieties only, out of the many hundreds of varieties in general cultivation. The N.C.S. cannot regard itself as promoting the cultivation of the Chrysanthemum, when one of its leading classes is for 12 varieties only. Another important fact in connection with the limited numbers of varieties staged in the vase classes is the practice of staging only the giant varieties to the exclusion of many handsome varieties of beautiful form and grand quality. Growers have come to recognise that the judges pay more than proper respect to mere size, and, on this account, only the largest varieties are exhibited; in a series of entries varieties are duplicated, triplicated and so on correspondingly with the number of exhibits staged. As instance of what I mean, how frequently we see vases of Hon. Mrs. Lopes, Lady Talbot, F. S. Vallis, Reginald Vallis, Mme. Paolo Radaelli, Mme. G. Rivol, &c., exhibited in the vase classes simply because they are the largest and most impressive. Surely there is equal quality in varieties such as W. Gee, Frank Payne, Mrs. G. Mileham, Mrs. C. Beckett, Superb, Mrs. Trevor Williams, Capt. Julian, Evelyn Archer, Keith Luxford, W. Beadle, &c.

The vase classes, as at present constituted, provide for the exhibits to be arranged in long, straight lines of somewhat top-heavy arrangements of handsome blooms. Between the vases are unduly large, unlovely, blank spaces, of which no advantage is taken, and there is a distinct loss in not providing something to remove the barrenness of this system. Therefore, a return to the lecturer's suggestion of exhibiting large blooms individually in vases is to be advocated. For there is no method to equal this for representing each individual flower in its true character.

As an illustration of decorative effect achieved when the exhibitors have had the opportunity given them, Mr. Jones pointed to the exhibition of single varieties at the great show at the Crystal Palace in November last—which was the most pleasing and artistic table of singles ever arranged.

Classes should be created either for groups of cut Chrysanthemums on a given table space, or for a specified number of blooms, leaving it to the exhibitor to make the most of his space.

Reference was made to a class provided at the show of the Dulwich Chrysanthemum Society with which Mr. Hogg was much impressed. The class in the schedule provides for "A table of Chrysanthemums, any varieties, 4 feet by 3 feet, to face three ways, arrange with foliage plants." This class represented some of the most beautiful exhibits of large Chrysanthemums which the

lecturer had ever judged. It is a method that should be adopted by every Chrysanthemum society that desires to prove the decorative worth of big blooms.

Classes should also be formed for 12, 24, or 48 blooms, more or less distinct, which should be set up in the way already referred to. Classes for both Japanese and Incurved blooms could be provided for, and their value as decorative material proved. The blooms could be set up individually in vases, and be disposed in any manner that the exhibitor in his discretion thought well. There should be foliage plants or cut foliage disposed in pleasing and artistic fashion amongst the blooms. An extremely simple utensil for exhibiting in this fashion is the "Godfrey tube." This simple contrivance can be inserted in the ball of soil of the foliage plants if desired, and the work of arrangement simplified.

The discussion which followed Mr. Jones's paper was distinctly in favour of retaining boards at the National show for a portion of the exhibits, and it was thought that something should be done to render the vase and decorative classes more interesting from a spectacular point of view.

LARGE BLOOMS FOR FLORAL DECORATIONS.

Mr. R. F. Felton followed with an interesting paper, dealing with "The Use of Large Blooms in Floral Decorations." The paper on this subject opened with the statement that the Chrysanthemum provides a more perfectly graduated system of colouring for floral decoration than any other plant. There had been what might be termed a crusade against the use of large blooms. But Mr. Felton was perfectly sure that large blooms were a distinct advantage if used in their proper positions. The principal point to bear in mind was that flowers must always be used in proportion to their size, and, in the case of large blooms, to be useful, they must be individually perfect. If a large vase or table is filled with specimen blooms, it not only looks well as a whole, but every individual flower is a picture in itself. Where, in many cases, the large flowers alone look out of place, their effect and appearance can be greatly improved by inserting light and graceful sprays in combination, and thus a most pleasing effect is secured. The practice of flooding the market with poor miserable flowers was strongly deprecated, and growers were advised to keep the quality as high as possible.

LATE-ROOTED CUTTINGS.

Mr. T. Stevenson gave the concluding paper, on "Late-struck Japanese Chrysanthemums for Exhibition." In dealing with this subject, Mr. Stevenson stated that a great many varieties of Chrysanthemums will give equally as good flowers if struck late, and grown on a single stem in 6-inch pots with a check, as if struck early in the season. The practice advocated was to strike the cuttings in pots or boxes about the third week in March, pot on directly the cuttings were rooted, and put them into the flowering pots, generally 6-inch pots, about the first week in June. He was opposed to much stopping, as most varieties could be grown naturally on the first crown bud. He also found that varieties grown in this manner required more manure than those grown in large pots, and that they finish better.

In the discussion, Mr. Stevenson stated that on his famous stands at the Crystal Palace during the present season nearly half his blooms had been produced by plants struck in March and grown on single stems in small pots.

SMITHFIELD CLUB.

DECEMBER 5-9.—The Cattle Show at Islington always serves to emphasise the close relationship between agriculture and horticulture. After the visitor has inspected the cattle, sheep, and pigs, there remain the thousand and one side shows, which go to complete the exhibition, always reminding us of a Holland House show, where the "sundries" have an interest of their own. But, as any reference to a cattle show would be incomplete without mentioning the champion beast, it may be stated that Mr. J. J. CRIDLAN, Home Farm, Maisemore Park, Gloucester, beat all comers with his Aberdeen-Angus heifer, a magnificent beast 2 years 11 months and 23 weeks old, and weighing 14 cwt. 1 qr. 24 lb. The pen containing this fine animal was decorated with cards of honour, announcing it the

winner of the King's Challenge Cup, a piece of plate of the value of 100 guineas given by the Society, two silver cups, and money. His Majesty the KING, who met with success in many classes, was Mr. CRIDLAN's nearest competitor. The sheep appeared larger and fatter than ever whilst those interested in pigs found breeds of all kinds well represented.

Most of the exhibits of the seed firms were arranged in the gallery. Mangels, Swedes, Turnips, Parsnips, and other roots used as food by the stock-breeder were piled in the usual orthodox fashion, forming walls to convenient offices. Amongst the largest exhibitors of roots and seeds were Messrs SUTTON & SONS, Reading. The roots seemed bigger than ever, one specimen of Prize-Winner Yellow Globe Mangel turned the scale at 42 lb. Very fine also were this firm's Onions and other garden vegetables, two new Potatos being seen in Acquisition and Garden Favourite, the latter a second early variety of promise. There were Carrots of the White Belgian variety weighing 10 lb. each, a selection of Grasses, some interesting entomological specimens, Mushroom spawn, plump, clean samples of cereals of all sorts, representing the choicest strains, and some Cyclamens in flower, giving a touch of colour to the display.

MESSRS. JAMES CARTER & CO., Holborn, also exhibited farm and garden roots and vegetables extensively, making a prominent feature of Sugar-Beet, which might easily be mistaken for a coarse Parsnip, and not in the least like a garden Beet. These roots were said to contain 20 per cent. of sugar. Several other firms displayed Sugar-Beet on their stands, pointing to a demand in this direction. Messrs. CARTER had fine samples of Ailsa Craig and Cranston's Excelsior Onions, a selection of garden Beet, including fine roots of Crimson Ball; Carrots, including a "giant" variety in Red Elephant, used as cattle food; Globe Mangels, weighing 30-40 lb. each, and a new Mangel, Red Windsor, of which the seeds will be distributed in 1911. Bottles of juice from Sugar-Beet, illustrating the saccharine properties, were arranged along the front of the stand.

MESSRS. LITTLE & BALLANTYNE, Carlisle, had an interesting stand, with a magnificent show of roots grown from selected seeds, including their "Chieftain" Yellow Turnip. Samples were also shown of seed Potatos grown at their farms.

MESSRS. EDWARD WEBB & SONS, Wordsley, Stourbridge, showed mammoth Mangels, Turnips, and Swedes, sacks of cereals, seed Potatos, Onions, Peas, and other vegetables. Their sample of White Queen Wheat was especially good, Giant King Swede, and mammoth Long Red Mangel are splendid roots of stock-feeding. Some excellent Onions were shown in their bulbs of Improved Banbury.

MESSRS. TOOGOOD & SONS, Southampton, were found in their usual place in the Gilbey Hall, having a selection of garden vegetables, besides cattle roots and cereals.

In the same hall, Messrs. LAXTON BROS., Bedford, displayed 50 varieties of Apples, with standard and trained fruit trees.

Similar displays were made by the KING'S ACRE NURSERY CO.; Messrs. W. & J. BROWN, Peterborough; and Messrs. HORNE BROS., Cliffe, near Rochester, Kent. Messrs. HORNE BROS. had some remarkably fine Apples, especially Mère de Ménage, Chas. Ross, The Houblon, and Lord Derby. The KING'S ACRE NURSERIES, Hereford, had choice fruits of their fine Apple King's Acre Bountiful, also Tyler's Kernel, and Golden Noble.

MESSRS. JOHN K. KING & SONS, Coggeshall, made a magnificent display with roots. Their Golden Tankard yellow-fleshed Mangel has furnished 94 tons to the acre. In the centre of the stand they showed Kohl Rabi of fine appearance. Their Empire Sugar-Beet is said to contain a high percentage of sugar. They also showed Grasses and Clovers, cereals, and Potatos.

MESSRS. E. W. KING & CO., Coggeshall, showed fine roots of Mangels in Orange Globe and Essex Marvel, also Potatos, Beans, Peas, varieties of Beet, and seeds of cereals. Some Sugar-Beets were observed on this stand. Amongst the Potatos was the celebrated Northern Star variety, which is said to be coming into favour again. Their Centenary Turnip, with yellow flesh and skin netted like a Melon, is said to be splendid for culinary purposes.

MESSRS. HARRISON & SONS, Leicester, had gar-

den as well as field roots. Selected Crimson Globe and Cheltenham Beet were excellent, also Early Market Carrot and Ailsa Craig Onion. A new Mangel named Sunset is of exceptional size. Brussels Sprouts, Potatos, Leeks and Onions were presented in excellent condition.

MESSRS. KENT & BRYDON, Darlington, showed roots and Potatos. Some of their specialities were Green-Top Yellow Turnip, Yellow Intermediate Perfection Swede, Darlington Potato (new), and Darlington Swede.

Spraying machines, syringes, nozzles and knapsack sprayers were displayed by THE FOUR OAKS CO., Sutton Coldfield, in the King Edward's Hall, and Messrs. WALTER VOSS & CO., Carlton Works, Millwall, had manures and washes, including the Woburn specialities. Woburn Bordeaux paste is easy to mix, costs less than copper sulphate, and is very efficient. Messrs. KNIGHTS & MUNDY, Bermondsey, showed some uncommon manures. They had salt, from the fish markets, specially recommended for pasture and Asparagus beds; rags, fur waste, seal fleshings, flock, horn-parings, fish guano, a mixture of meat, fish, wool and blood, and many others.

MESSRS. W. COOPER & NEPHEWS, Berkhamsted, showed their specialities in insecticides and fungicides, including Apterite. A preparation named 'Corvusine' should be valuable to gardeners if the claims of the makers are justified. Seeds treated with this substance are claimed to be immune from attacks of birds and vermin. The maker is Mr. Arthur E. Hawker, 59, Mark Lane, London.

JEYES' SANITARY COMPOUND CO., LTD., recommend their Cyllin soft soap as a wash for aphides, caterpillars, and other foliage pests.

THE TARSAP CO., 155, Fenchurch Street, London, make a preparation called "Aphicide," for similar purposes.

A handy tool was seen in "Fastnut," a spanner that adjusts itself automatically to a bolt-nut, enabling it to be removed easily and quickly. Amongst other exhibits were various forms of fencing, poultry houses and appliances, bee-keepers' requisites, lime-washing machines, vaporisers, cultivators, pumps, cloths, wagon covers, cordage, netting, mowers, and brushes, useful alike to the gardener and the farmer.

NATIONAL VEGETABLE.

ANNUAL GENERAL MEETING.

DECEMBER 6.—The first annual meeting of the members of this Society took place at the Royal Horticultural Hall on Tuesday last. In the absence of the President, the Duke of Portland, K.G., the chair was taken by Mr. Alexander Dean, V.M.H. There were also present Messrs. Owen Thomas, S. Mortimer, J. Jaques, W. A. Cook, E. Beckett, H. Markham, R. Pinches, G. Gordon, F. W. Harvey, J. Harrison Dick, and Horace J. Wright, with the hon. sec., Mr. E. G. Quick. Letters expressing regrets for unavoidable absence were read from Messrs. C. Foster and G. Wythes, the treasurer.

In moving the adoption of the report and balance-sheet, the Chairman alluded to the fact that these had already been distributed to the members. He thought that they might congratulate themselves upon a most successful first year, and he ascribed this largely to the excellent spirit in which the trade had supported the Society alike in its show and its trials. In further reference to the trials, Mr. Dean said that the thanks of the members were especially due to Messrs. C. Foster, G. Hobday, and W. Poupart for the manner in which they were conducted. The most scrupulous care was taken to ensure perfect equality for all participants.

The crops dealt with were autumn-sown spring Cabbages, and the trials were triplicated, the stations being Twickenham, Middlesex; Sutton Green, Surrey; and Romford, Essex; the soils are respectively fairly retentive loam on a deep base of gravel; very sandy loam on a deep base of yellow sand; and clay. At two stations—Twickenham and Sutton Green—there were trials of autumn-sown Onions, no fewer than 72 stocks being sent by 19 seedsmen. At Sutton Green only there was a trial of early Potatos, the planting being done on April 20 and the inspection made on July 29. As the results of the Committee's awards have already been published, they need not now be repeated.

In reference to the show which was held on

September 23, Mr. Dean said that it must have been a source of gratification to all the members to see the magnificent display. There was quantity, and in almost all instances refinement and quality. If visitors were not so numerous as might have been wished, they were at least intensely interested in, and keenly critical of, the produce staged. He thought, taking the first show as an augury, that they might confidently look forward to a larger and finer display at the second exhibition, which was fixed for Wednesday, August 30, 1911, at the Royal Horticultural Hall.

The financial affairs of the Society were most satisfactory, for while the total receipts were £229 14s., the expenditure only amounted to £201 8s. 6½d., thus leaving a credit balance of £28 5s. 5½d.

The number of members, inclusive of vice-presidents, was 166, and the speaker affirmed that there would be two or three times as many in a couple of years, provided that the management of affairs is as good in the future as it has been in the past.

The report further embodied thanks to all who had rendered assistance in the successful launching of the society, and recommended that the hon. sec. be given an honorarium of 10 guineas as a tangible recognition of the services that he had rendered. Mr. Owen Thomas, V.M.H., briefly seconded the adoption of the report and balance-sheet as presented, and it was carried without dissent.

Mr. J. Harrison Dick proposed and Mr. J. Jaques seconded, and it was unanimously resolved that the report and balance-sheet, as passed, should be published as a portion of the 1911 schedule.

It was reported that arrangements had been made to conduct trials of early Cauliflowers, early Peas, Beet, Carrots, and Onions, the last to be sown under glass and transplanted during 1911. In reference to the donors of special awards, the Secretary said that arrangements had been completed with Messrs. Clay & Son, Dickson & Robinson, Dobbie & Co., G. Massey, and Robt. Sydenham, Ltd., and that several other houses were in favourable negotiation.

The proposition that the Duke of Portland, K.G., should be again asked to accept the presidency of the Society was carried with acclamation, and the re-election of Messrs. Alexander Dean chairman, Owen Thomas vice-chairman, George Wythes treasurer, and E. G. Quick hon. secretary was accepted with similar enthusiasm. Messrs. R. Pinches and W. R. Wilson, neither being officials of the Society nor members of the committee, were elected auditors, and Messrs. A. G. Gentle, A. Grubb, and Horace J. Wright were placed on the committee.

The Chairman asked the Press to announce that the committee would meet on Tuesday, January 3, to arrange the schedule for 1911.

WEST BIRMINGHAM AND DISTRICT HORTICULTURAL.

NOVEMBER 12.—The first annual meeting of the society was held on the above date. There was a large attendance. A letter was read from Mr. William H. Morter, the superintendent of the City parks, resigning the post of chairman of committee. The report of the hon. secretaries (Messrs. Lamb and Cuddington) was gratifying, as it had been a most successful first year. The financial statement showed a sum in hand of £63 15s. The expenditure amounted to £145 11s. 9d. The report and balance-sheet were adopted, several members commenting upon their satisfactory character. Various alterations to the rules were considered and certain amendments made. The officers were appointed. Mr. Councillor Fraley being elected to the position of chairman of committees, vacated by Mr. Morter. It was decided to request the City Parks Committee to grant the use of Warley Woods on Friday and Saturday, August 18 and 19, for the purposes of the annual exhibition.

TRADE NOTICE.

LEAMINGTON NURSERYMEN AND FLORISTS, LTD.

This business has been purchased by Alderman J. Bennett, who intends carrying it on as a florist, nurseryman, and seedsman. Mr. J. Smith, who was appointed manager just before the liquidation, has been re-appointed to that position.

MARKETS.

COVENT GARDEN, December 7.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in one day.—EDS.]

Cut Flowers, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Anemones (French), per doz. bunches	3 0	4 0	Mimosa, per pad...	6 0	10 0
Arum Lily (see Richardson)			Narcissus Paper White, per pad	9 0	10 0
Azaleas, white, per dozen bunches	4 0	5 0	Soliel d'Or, per doz. bunches	3 0	4 0
Bouvardia, per doz. bunches	4 0	5 0	Orchids, Cattleya, per doz.	10 0	12 0
Camellias, per doz. bunches	2 0	2 6	Cypripedium, per doz. blooms	2 0	3 0
Carnations, p. doz. blooms, best American varieties	3 0	4 0	Odontoglossum, per dozen blooms	2 6	3 0
— smaller, per doz. bunches	12 0	15 0	Pelargoniums, Zonal, double scarlet	6 0	8 0
Chrysanthemums, per doz. bunches	6 0	10 0	Poinsettias, per doz. heads	6 0	9 0
— larger per doz. blooms	1 6	3 0	Ranunculus, double yellow, per doz. bunches	1 0	6 0
— specimen blooms, p. doz.	4 0	5 0	Richardias, per doz. blooms	5 0	7 0
Gardenias, p. doz.	2 0	4 0	Roses, 12 blooms, Niphetos	2 0	2 6
Hyalanth (Roman), p. doz. bunches	9 0	12 0	— Bridesmaid	2 0	3 0
Lapageria, white, per dozen	2 0	3 0	— C. Metmet	2 0	3 0
Lilium auratum, per bunch	3 0	4 0	— Kaiserin Aug. Victoria	2 0	3 0
— longiflorum	2 0	2 6	— Liberty	3 0	5 0
— lancifolium rubrum	1 6	2 0	— Mme Chateaufort	3 0	5 0
— lancifolium album	3 0	4 0	— Richmond	3 0	5 0
Lily of the Valley, p. doz. bunches	9 0	12 0	— Sunset	2 0	3 0
— extra quality	12 0	14 0	— The Bride	2 0	3 0
Marguerites, doz. bunches, white	2 0	3 0	Tuberose, p. gross	4 0	5 0
— per doz. bunches, yellow	3 0	4 0	— per doz. blooms	0 5	0 6
			Violets, per doz. bunches	2 0	3 0
			— Parma, bunch	2 6	3 0

Cut Foliage, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Adiantum cuneatum, per dozen bunches	4 0	6 0	Berns (French), p. doz. bunches	4 0	—
Asparagus plumosus, long trails, per doz. bunches	3 0	6 0	Hardy foliage (various), per dozen bunches	3 0	5 0
— medium, doz. bunches	6 0	9 0	Ivy-leaves, bronze	2 0	2 6
— Sprengeri	6 0	9 0	— long trails per bundle	1 6	2 0
Croton leaves, per dozen bunches	6 0	9 0	— short green, per doz. bunches	1 0	2 0
Ferns, per dozen bunches (English)	3 0	—	Moss, per gross	4 0	5 0
			Myrtle, dz. behs. (English)	4 0	6 0
			— small-leaved	1 0	1 6
			— French	1 0	1 6

Plants in Pots, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Aralia Sieboldii, p. dozen	4 0	6 0	Enonymus, per dz., in pots	4 0	8 0
— larger specimens	9 0	12 0	Eucynthus, from the ground	3 0	6 0
— Moseri	6 0	8 0	Ficus, in thumbs, per 100	8 0	12 0
— larger plants	9 0	15 0	— in small and large 60's	12 0	20 0
Araucaria excelsa, per dozen	12 0	30 0	— in 48's, per dz.	5 0	8 0
— large plants, each	3 6	5 0	— choicer sorts per dozen	8 0	12 0
Asparagus plumosus nanus, per dozen	9 0	12 0	— in 32's, per dz.	10 0	18 0
— Sprengeri	6 0	9 0	Ficus elastica, per dozen	8 0	12 0
Aspidistra, p. dz., green	15 0	24 0	— repens, per dozen	4 0	5 0
— variegated	24 0	36 0	Isolepis, per dozen	3 0	4 0
Begonia Gloire de Lorraine, p. dz.	8 0	12 0	Kentia Belmoreana, per dozen	15 0	21 0
— Turnford Hall, white	12 0	24 0	— Fosteriana, per dozen	18 0	24 0
Chrysanthemums in pots	9 0	12 0	Latania borbonica, per dozen	15 0	18 0
— specials	18 0	24 0	Lilium longiflorum, per dz.	12 0	15 0
Cocos Weddelliana, per dozen	18 0	30 0	Marguerites, white, per dozen	6 0	8 0
Crotons, per dozen	12 0	18 0	Poinsettias, per dozen	8 0	15 0
Cyclamen, per doz.	9 0	12 0	Selaginellas, per dozen	4 0	6 0
Cyperus alternifolius, per doz.	5 0	6 0	Solanums, per dozen	8 0	10 0
— laxus, per doz.	4 0	5 0	Spiraea (pink), per dozen	12 0	18 0
Erica gracilis, p. dz.	9 0	12 0	— (white)	6 0	9 0
— gracilis nivalis	9 0	12 0			
— hyemalis	10 0	15 0			

Fruit: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Apples (American), per barrel:			Apples (Nova Scotia), Blenheim Pippin	22 0	24 0
— Greening	22 0	—	— Baldwin	20 0	22 0
— Baldwin	22 0	—	— Greening	20 0	—
— York Imperial	22 0	24 6	— (Californian), Newtown Pippin, per case	8 6	10 0
— Albemarle	28 0	30 0	— 4 tiers	8 6	10 0
— (Nova Scotian), per barrel:			— 4½ tiers	6 6	8 6
— Kings	22 0	24 0			
— Wine Sap	10 0	12 0			
— Ribston Pippin	20 0	24 0			

Fruit: Average Wholesale Prices (continued).

	s.d.	s.d.		s.d.	s.d.
Apples (Oregon), Newt-own Pippin	12 6	15 0	Mandarines, p. box 25's	1 0	1 6
— Yakima	10 6	12 6	Medlars (English), ½ bushel	4 0	4 6
— (Wenatchee Valley), Wine Sap, per case	9 6	12 6	— (French), per basket, 25 lbs.	4 0	5 0
— Jonathan	9 6	12 6	Nuts, Almonds, p. bag	36 0	42 0
— Grimes' Golden	9 0	12 6	— Chestnuts (Italian), per sack	22 0	24 0
— Spitzenberg	9 0	12 6	— (Redon), per bag	10 0	16 0
— Ark Annas	9 0	12 6	— Brazils, new, per peck	3 0	—
— Rome Beauty	9 0	12 6	— per cwt.	48 0	—
— Black Twig	9 0	12 6	— sorted	55 0	—
— Baldwin	9 0	12 0	— Barcelona, per bag	32 0	34 0
— (English) Cox's Orange Pippin, ½ bushel	7 6	12 0	— Cocoanuts (100)	10 0	14 0
— Bramley's Seedling, per bushel	6 6	8 0	— English Walnuts, p. dz. lbs.	7 0	8 0
— Blenheim Pippin, per bushel	5 6	7 0	— Doubles, per doz. lbs.	12 0	18 0
Bananas, bunch:			— (French), Grenobles, bags	8 6	11 6
— Doubles	11 0	14 0	— English Cobs per lb.	0 10	1 0
— No 1	9 0	—	— shelled, 1 lb. box of Walnuts	1 4	—
— Extra	10 0	11 0	— 1 lb. bx. Barcelona 9½	—	—
— Giant	13 0	—	Oranges (Jamaica), per case (252)	10 0	—
— Red coloured	4 0	5 6	— (200)	10 6	12 0
— Red Doubles	8 0	9 0	— (216)	11 6	—
— Loose, per doz.	0 6	1 0	— New (Garucha), per case (120)	21 0	—
Cranberries, per case (30 qts.)	9 6	—	— (714)	12 6	15 6
Dates (Tunis), per doz. Cartons	4 9	5 0	— Jaffa, case (114)	7 6	—
Figs (Italian), boxes	0 8	1 0	Pears (Californian), per case:		
Grape Fruit, case:			— Beurre Hardy	10 6	—
— 36's	—	—	— Glou Morceau	12 6	—
— 40's	—	—	— Winter Nelis	17 0	20 0
— 64's	10 0	12 0	— Easter Beurré	9 6	10 6
— 54's	—	—	— Doyenné du Comice	22 6	—
Grapes (English), per lb.:			— Katers, case	6 6	—
— Black Alicante	0 8	1 0	— (French), cases	3 0	3 6
— Muscat of Alexandria	1 3	2 6	— Catillac, ½ sieve	3 6	4 6
— Canon Hall Muscat	2 6	4 0	— (Dutch), stewing Molles, per ½ sieve	3 6	4 0
— Gros Colmar	1 0	1 9	Potatoes, per box	1 6	2 0
— Black Alicante (Guernsey)	0 4	0 6	— Pomeapples	2 3	3 6
— Almeria (tinted), barrel	10 6	13 6	Pomegranates, per case	1 9	2 3
Lemons:			Quinces, p. ½ sieve	6 0	—
— Malaga (420)	15 0	20 0			
— Messina (300)	12 6	13 6			
Melons, Spanish Bronze (24's)	14 0	—			

Christmas Fruits and Preserves.

	s.d.	s.d.		s.d.	s.d.
Figs, 1lb. packets, per doz.	5 0	—	Nuts, Monkey, hand-picked, per bag	22 6	—
— boxes, per doz.	3 0	5 0	Dates, per cwt.:		
— Natural, per cwt.	27 6	—	— (Lair)	9 9	—
— Taps, per cwt.	23 6	—	— (Kadowie)	11 3	—
Nuts, Brazils, hand-picked, best, per cwt.	65 0	—	— (Hallowee)	12 6	—
— Barcelona, hand-screened, per bag	37 6	—	Metz Fruits, p. dz.:		
— Almonds (Montague), per bag	48 0	—	— ½ lb. boxes	3 9	—
— (Rintza), p. bag	44 0	—	— ¼ lb. boxes	6 6	—
			— 1 lb. boxes	10 0	—

Vegetables: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Artichokes (Globe), per dozen	1 6	2 0	Mustard and Cress, per dozen punnets	0 6	0 9
— ground ½ sieve	0 9	1 0	Onions, Dutch, per 100	4 3	4 9
Aubergines, doz.	1 6	2 0	— New Spanish, case	7 0	8 0
Asparagus, Paris Green	4 6	5 0	— Valencia, case	6 0	7 0
Beans, Broad (French), per pad	2 6	3 6	— (Lugano) bag	5 6	6 6
— per packet	0 4	0 6	Shallots, per lb.	0 2	0 3
— Jersey, per lb.	1 6	2 0	— Pickling, ½ sieve	2 0	3 0
Beetroot, bushel	1 0	1 6	Parsley, ½ sieve	1 0	1 6
Cabbages, tally	2 0	3 0	Peas (French), per pad	4 6	5 0
Carrots (English) — cwt.	2 3	2 9	— Seakale, bundle	1 0	1 2
— dirty	1 6	1 9	Sprouts, ½ bushel	1 0	1 6
— (French), per doz n bunches	4 0	5 0	Tomatoes		
Cauliflowers, hamper (24-30)	1 6	2 6	— (English), per dozen lbs.	4 0	4 6
Celery, per dozen	6 0	12 0	— small selected	3 6	4 0
Chicory, per lb.	0 3	0 4	— seconds	1 6	2 0
Corncobs (Indian corn)	1 3	1 6	— (Guernsey), per dozen lbs.	3 0	4 0
Cucumbers, p. doz.	4 0	8 0	— (Canary), per bundle of 4 cases	11 0	14 0
Endive, per dozen	0 6	0 9	Turnips		
Herbs (sweet), packets, per gross	7 0	—	— (French)	4 0	5 0
Horseradish, 12 bundles	10 0	16 0	— unwashed, per bag	2 0	—
Lettuce (French), Cos, per dozen	1 6	2 0	— washed	2 3	2 6
Mint, p. doz. bunches	2 0	—	Watercress, p. dz. bunches	0 6	0 6½
Mushrooms, p. b. 0 10-13	—	—			
— broilers	0 10	1 0			

REMARKS.—The market is well supplied with Apples, but prices and the amount of trade are about the same as last week. Pears from Belgium, Holland and France, are principally of the Catillac variety. There are some splendid Pears of the Easter Beurré variety from Oregon, U.S.A.; these are finding a good market. There is a slightly better demand for Grapes compared with last week. English Tomatoes are almost finished for the season, but plenty are arriving from the Canary Islands. The first shipment of

Californian Seedless Oranges is due to arrive next week. The crop this season is reported to be good, and the quality superior. Vegetables this week show a decrease in supply, with a tendency to higher prices. *E. H. R., Covent Garden, December 7, 1910.*

Potatoes.

	per cwt.		per cwt.
	s.d. s.d.		s.d. s.d.
Kents—		Lincolns—	
Imperial Queen ...	4 0-4 6	Evergoods ...	3 6-3 6
Sharpe's Express ...	4 0-4 3	British Queen ...	4 0-4 6
Eclyse ...	3 9-4 3	Up-to-Date ...	4 0-4 6
Epicure ...	3 6-3 9	Maincrop ...	4 3-4 9
May Queen ...	3 9-4 0	Epicure ...	3 6 —
Bedfords—		Blacklands ...	3 3-3 6
Up-to-Date ...	3 9-4 3	Dunbars—	per bag
British Queen ...	3 9-4 0	Up-to-Date ...	5 0-5 6
Lincolns—		Maincrop ...	5 6 —
King Edwards ...	4 0-4 3		

REMARKS.—The demand for Potatoes is not quite so good as last week, and stocks in London are still large. There is an indication that prices will be lower in the near future. *Edward J. Newman, Covent Garden and St. Pancras, December 7, 1910.*

COVENT GARDEN FLOWER MARKET.

Trade is very uncertain and supplies of most subjects continue to be in excess of all demands. Chrysanthemums are still the leading feature, and are of better quality, supplies from out-of-doors being over. Fine specimen blooms (white and yellow) are offered at very moderate prices. Medium-sized blooms sell rather better, although numbers remain unsold at the close of the market, when some of the growers clear them for what they will fetch. Carnations are well supplied and prices are rather low for December. Lilies are not very plentiful, and their prices may advance considerably. Supplies of Roses continue to be fully equal to all demands. Safrano Roses from the south of France are arriving in good condition. Lily of the Valley varies but little; supplies are plentiful and the quality is good. Richardias (Callas) are making rather better prices, due probably to supplies being held back for the Christmas trade. Roman Hyacinth is very good, and supplies are more than equal to demands. Inflorescences of Poinsettia (Euphorbia) are good this season, and with mild weather the bracts stand up well. At present, the demand for them is limited, and prices are lower than they may be later on. The value of all cut flowers will be very uncertain during the next few weeks.

POT PLANTS.

Good Chrysanthemums are fairly plentiful though the supplies are beginning to fall off a little, and higher prices are asked for plants of good quality. Begonias Gloire de Lorraine and the Turnford Hall variety are well flowered, but they have not been selling readily. Ericas are good this season and plants of *E. hyemalis* will be available later than usual; prices vary little, yet buyers should secure their supplies for the Christmas trade early. *E. gracilis* is not quite finished, but the autumn variety will not last much longer. Poinsettias are good, but rather tall. Roman Hyacinths grown in boxes are useful as the plants can be transferred easily to pots or fancy bowls. Ferns in all sizes are well supplied and their value varies very little. Palms are making fairly good prices, and it is probable that they will be dearer in the near future. Already higher prices are asked for the smaller plants of Kentias and Cocos Weddelliana. Hardy shrubs of various sorts are seen on several stands. *A. H., Covent Garden, December 7, 1910.*

LAW NOTE.

FLOWER SHOW DISPUTE.

At the Wolverhampton County Court recently a claim was made against members of the committee of the Codsall Horticultural Society, for £1 19s. prize money, which had been refused on the ground that plaintiff's exhibit was not a bonâ-fide one.

The plaintiff showed six spikes of Ten Week Stock at Codsall Flower Show, but he was subsequently disqualified on the ground that his exhibit was not grown by himself. He told the committee that they could send someone down and he would show them where his spikes came from, but the deputation did not go down until it was getting dark.

Plaintiff's wife said the Stocks grown in the garden were the same as shown at Codsall, and a witness deposed to seeing the Stocks which were exhibited at Brewood growing in the exhibitor's garden.

His Honour pointed out a rule of the society that all specimens exhibited for competition must be the bonâ-fide productions of the exhibitors, and another to the effect that matters in dispute at the show must be proved to the satisfaction of the committee.

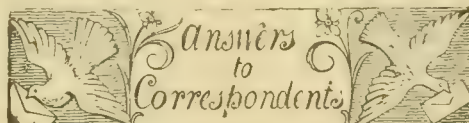
The Vicar of Codsall, chairman of the committee, stated that the objection was proved to the unanimous satisfaction of the committee.

His Honour, having regard to the rule, found for defendants. He intimated, however, that he should himself have been inclined to find for plaintiff.

Obituary.

WILLIAM ROTHWELL.—We regret to record the death, on November 19, of Mr. Wm. Rothwell, late gardener at Leighton Hall, Welshpool, after a painful illness lasting for 12 months. The deceased, who was 66 years of age, had lived at Leighton for 40 years, 34 as head gardener. Mr. Rothwell was a member of the Leighton Parish Council. He was held in high esteem by his employers, and his loss will be greatly regretted by a large circle of friends.

ROBERT MACFEE.—The death of Mr. Robert Macfee, nurseryman and seedsman, Paisley, occurred on the 4th inst., after a short illness. Mr. Macfee was not only a well known nurseryman, but he officiated for 25 years as secretary of the local horticultural society. He leaves a widow and daughter.



AIR SLAKED LIME: *T. W. M.* Quicklime on exposure to air absorbs water and becomes reduced to powder; it is then termed slaked lime. It is this form of lime which was recommended for use in the reply to *Inquirer* in the issue for November 26, p. 404.

BEGONIA: *L. G.* The leaves are infested with mites which cannot be discerned without the use of a microscope. It is the injury done to the exterior of the leaves by the mites which causes the rusty appearance you complain of. The mites attack the under surfaces of the leaves, and, in some instances, we have seen even the growing point crippled and destroyed by this pest. The best method of treatment is to dip the plants when they are out of flower in Tobacco water, or if the plants are in flower you may sponge the under sides of the leaves with Tobacco water or dust them with dry Tobacco powder by means of a puff ball.

BEGONIA GLOIRE DE LORRAINE: *W. McC.* There is no trace of disease present caused by either fungi or insects. The general condition of the plant suggests that it has been growing in a place not provided with sufficient shade.

COKE STORAGE: *J. I.* Fresh coke certainly burns away more quickly than that which has been stored. It is probable that a certain amount of gas is retained by fresh coke, which assists the combustion. During storage, this gas escapes into the atmosphere. At the same time there is a disadvantage in allowing coke to be exposed to wet weather, for the wet which is absorbed must be driven off before much heat is developed. A covered shed should certainly be provided for storing coke.

FLOWERING PERIOD OF CHRYSANTHEMUMS: *G. H. H.* We believe it to be the common experience of Chrysanthemum cultivators that the time of inserting the cuttings has some influence upon the period at which a plant will form its first natural break. If this is the case, the time of inserting the cutting may be said to have a distinct influence on the period at which flowering will commence. At the same time, it would be contrary to the facts to state that the insertion of the cutting determines in itself the period of flowering, for it is only one of many causes which go to determine that period. As a rule, a grower knows whether he requires a given variety to flower on the crown bud, or whether the flower can be obtained at its best only on the terminal bud. The crown bud usually gives the greater size and the terminal bud refinement of petal and better colour. Having decided which bud he wishes to develop, he so arranges the cultivation, as to have that particular bud in flower at the time when the exhibition takes place. As the first step towards securing this end, he inserts his cuttings at a particular date; in most cases after the proper date is ascertained the plants will yield flowers from the chosen bud at the desired time. But in other cases the cultivator has to stop the growths in order to force the plants to break into secondary growths earlier than they would do so naturally.

NAMES OF PLANTS.—*R. A. A.* 1, *Epidendrum elongatum*; 2, *Cochlidia sanguinea*; 3, *Masdevallia simula*; 4, *Restrepia trichoglossa*; 5, *Maxillaria tenuifolia*.—*P. G.* 1, *Codiaeum triumpfans*; 2, *C. variegatum*; 3, *C. Johannis*; 4, *C. Nevilliae*; 5, *C. angustifolium*; 6, *C. Macfarlanei*; 7, *C. Evansianum*; 8, *C. chrysophyllum*; 9, *C. Wilsonii*; 10, *C. Laingii*; 11, *C. Van Oerstedii*; 12, *C. elegans*.

NOTICE TO LEAVE: *H. L.* and *A. J.* It is customary for head gardeners to give or receive a month's notice before terminating their employment. We have repeatedly urged the desirability of a written agreement being arrived at between the contracting parties at the time of the appointment. In the absence of an agreement, questions of this nature are always likely to arise.

PYRAMIDAL APPLE TREES: *G. C., Boston, U.S.A.* Apples on the broad-leaf Paradise stock are above for market in bush rather than in pyramid shape. This stock was raised from a good strain of the French Doucin. It is important to avoid the use of the ordinary French Paradise, except for gardens, as it is of too dwarfing a habit of growth. The varieties that flourish in one district of this country are not the best for another, and it is not certain that many of the English varieties would do well in the United States. At any rate, very few American Apples flourish in this country. There is such a vast number of varieties that it is impracticable to name all that are grown successfully for market in this country. Favourite varieties which succeed in most districts are Lord Grosvenor, Queen, Ecklinville Seedling, Warner's King, Bramley's Seedling, and Lane's Prince Albert as culinary Apples, and Beauty of Bath, Worcester Pearmain, Allington Pippin, James Grieve, and Sturmer Pippin for dessert. These are named in the order of ripening. Cox's Orange Pippin, the best of all dessert Apples, succeeds only in specially favourable districts. Soil in a friable condition, that was heavily manured for the last crop, such as Potatoes, and subsoiled, is suitable for planting. Bush trees on the Paradise are planted from 9 feet to 12 feet apart each way; but less than 12 feet is not advisable. Gooseberries or Currants are usually planted between the trees. The best fertiliser is farmyard manure, applied in the autumn or winter. A good dressing of artificial is a mixture of 4 cwt. of superphosphate, 2 cwt. of sulphate of ammonia, and 2 cwt. of sulphate or muriate of potash per acre, applied in the spring. There is much difference of opinion as to the advantage of growing bush trees as compared with half-standards. The latter are most commonly grown in commercial plantations. As they do not branch out from close to the ground, and are usually planted 15 feet or more apart, they allow horse cultivation to be carried on much longer than is possible in the case of trees in bush shape. The advantages of low trees, as compared with tall standards, are numerous. They facilitate spraying, thinning of fruit, and gathering, whilst they suffer less of fruit from wind, and the Apples that fall are less injured than those which drop from tall trees. But it is to be borne in mind that the Paradise is a surface-rooting stock, and it is doubtful whether it is suitable to withstand the dry summers of the United States. Apple trees on the Paradise, or any other stock, should not be allowed to bear fruit until the third year after planting, and not much then, as premature fruiting dwarfs wood growth. Some varieties would fruit to a small extent in the second year, if allowed. The variation in quantity of fruit is so very wide that it is impossible to give an average for the first five fruiting years. There are no official estimates of fruit yields in this country. An average of a bushel per tree on a large acreage of different varieties would be a good one in the tenth year from planting, and there are 300 trees per acre at 12 feet apart each way.

Communications Received.—*J. J.* (thanks for 2s. 6d. for the R.G.O.F. box).—*A. D., J. V., W. A., Herts* *J. S., Ilford* *J. R. K., Cornishman*.—*H. G., J. C., R., A. B., C. E., M., H. M., V. D., R. W., W. J., R. P., S. A., J. D., R. P., B., C. E., G. W., H. S., St. Leonards*.—*H. C., Geneva* *H. S. T., W. C., J. N. L., F. D., France* *Doubtful* *H. A. B., H. C., Oldham* *F. W. M., W. B. R., Herts* *C. N. B., Bridgwater* *A. W.*

TITLE

Gardeners' Chronicle

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THE JUNO IRISES.

THE name Juno was applied to a certain section of the Iris family, apparently for no better reason than that in ancient mythology Iris, the messenger from gods to men, was sometimes represented as being more particularly attached to Juno than to the other deities. The application was scarcely apt, for Iris was in any case subordinate to Juno, and the names are now used in the opposite relation. However this may be, the name Juno stands for a very clearly marked section of bulbous Irises, distinguished by the fact that the bulb in its resting state has attached to its base a number of tapering, fleshy roots, which quickly send out branching rootlets when growth begins again in the autumn. The leaves, too, are unlike those of any other Irises, and in the larger species, at any rate, closely resemble those of the Maize (*Zea Mays*). The flowers are produced from the axils of the leaves, and may be either solitary in the small species or as many as eight or nine in number in well-grown plants of *I. bucharica* or *I. Willmottiana*. The Juno Irises are also remarkable in that they are the only species which have spherical pollen grains. Another peculiarity of the group is that the

inner perianth segments, which in other species are commonly and conveniently known as standards, are here much reduced in size, so as to be far shorter and narrower than the falls. Moreover, they usually extend horizontally, and are even in some cases depressed and droop down to touch the perianth tube. In fact, the words "fall" and "standard" are singularly inappropriate to the outer and inner segments of these Irises.

Hitherto, it has been usual, apparently, to make no subdivisions in this section, but increasing familiarity with the plants has shown that there are at least two well marked divisions comprised within it. It is characteristic of many species of this group that the haft of the fall bears large projecting wings—hence the name of the well-known species, *alata*—which tend to curl over, and meet above the branches of the style. Moreover, it is a curious fact that all the known species, which possess these winged falls, have also globular seeds, while all those of which the sides of the falls are parallel have seeds of distinct types. The majority of them are roughly cubical, the minority comprise only the rare species *Rosenbachiana* and *drepanophylla*, and possibly another species, as yet unpublished, from Bokhara.

The first group, those with the winged falls and globular seeds, comprises the following species: *alata*, *palestina*, *persica*, *caucasica*, *sindjarensis*, *Willmottiana*, *fumosa*, and *Stocksii*. Even among these there is a well marked line dividing off from the rest the two winter-flowering species, namely, *alata* and *palestina*. In both (and to some extent also in *persica*, which is the next to flower in order of time) the ovary remains for protection below the ground level until it is nearly ripe and the flowers are raised on long perianth tubes. Another peculiarity of these two Irises is that they and they alone of all the species at present in cultivation have pollen grains that are covered with minute spines. It has been suggested that these spines may afford some protection against moisture in the atmosphere, which would not penetrate among the close-lying points unless it were present in very large quantities. All Iris pollen grains swell up and burst at once if immersed in water, and it may be that this provision of spines on the pollen grains has enabled these species to propagate their kind, even in the winter months. The other main sub-group, consisting of plants with strap-shaped falls, comprises *orchioides*, *bucharica*, *Warleyensis*, *Fosteriana*, which all have cubical seeds, and *Rosenbachiana*, of which the seeds have a conspicuous cream-coloured seam or rhiphe extending all down one side from top to bottom, and are consequently readily distinguishable from those of any other known Iris, unless it be *drepanophylla*, which is only imperfectly known from dried specimens. It might be thought that the flat sides of the cubical seeds of the majority of this group were produced by pressure of the grains against each other in the capsule, but the experience of several years has shown that even when only a few seeds ripen in the capsule they are still compressed with flattened sides, while seeds of the species of the other group never become flattened, however closely crowded they may be.

The home of the Juno Irises is a comparatively narrow belt of country, stretching from the western shores of the Mediterranean to the Punjab in the east. *Alata* is found in Spain, especially in the neighbourhood of Cordova, where its time of flowering varies with the elevation; in Algeria and in Sicily, where it is abundant near streams on the slopes of Etna. *Palestina*, a near relative, is a native of Syria, while *persica* is found in Eastern Asia minor and North Persia, and has many local colour

varieties, of which *stenophylla* and *Taurii* are the best known. The home of *caucasica* is sufficiently indicated by its name, and so is that of *sindjarensis*, if one happens to remember that Sindjar is a mountain in Mesopotamia. Bokhara is the home of a number of the more recently introduced species, while *Stocksii* and *Fosteriana* are found further east in Afghanistan, and, lastly, *Aitchisonii* occurs in the Salt Hills of the Punjab.

As regards cultivation, the Juno Irises cannot be said to be difficult, provided that they are given a sunny, well-drained position. It is curious that the species that has probably been longest in cultivation in England, namely *persica*, should be on the whole the least easy of the group, but the explanation probably lies in the fact that it seems to prefer a good stiff loam to a very sandy soil. Unfortunately, it is almost impossible to lift these bulbs, with their lightly-attached, fleshy roots intact, from a heavy soil that cakes hard in summer. Consequently, the bulbs of *I. persica* supplied by the trade are usually without their roots. They make a feeble attempt, perhaps, to flower in their first season, but fail to form a good bulb for the following year. When once established therefore they are best left alone, or very carefully lifted when they have become too crowded.

The larger species seem less fastidious in their demand for heavy soil, and thrive amazingly in a well drained bed, well enriched with old leaf soil and manure. Flowering as they do in the early months of the year, they are a most welcome addition to our hardy bulbs, and if the bed cannot be placed in a sheltered corner, a temporary frame will preserve the flowers from the weather. Each plant of the taller species, such as *bucharica*, will remain in flower for two or three weeks, since the blooms open in succession from the top of the stem downwards.

There is a delightful range of colours in the flowers of these Irises. *Alata* is usually a deep blue, with a central orange coloured ridge, though pure white examples are known. *Palestina* varies from deep blue, through pale blue and bluish-green to a distinctly yellow green. *Persica* is a wonderful combination of white, sea green, and brown purple, set off with a central streak of orange. Of its varieties, *stenophylla* has large flowers of grey-blue blotched with indigo, and *Taurii* is mainly red-purple striped with gold. Golden yellow is supplied by *orchioides*, while *bucharica* has flowers of a milk-white colour, tipped with brilliant yellow on the blades of the falls. *Fosteriana* is distinguished by the olive-green coats of its bulbs, and by the contrast of its yellow falls with its dull purple standards. Perhaps the most brilliantly coloured of all is *Rosenbachiana*, of which no two seedlings appear to be alike. The prevailing colours are red-purple, white, and gold, but of late years some forms have been imported that have primrose yellow flowers, slightly veined with purple. These are said to come from a locality that rejoices in the name of Tabidara Bolo, but repeated enquiries and searches on maps have failed to establish the whereabouts of this place, beyond the fact that it is somewhere in Central Asia. Anyone who has once grown *Rosenbachiana* and seen the gaudy flowers develop at an amazing pace in a few sunny days in March will never wish to be without it again, and it is much to be hoped that it will not remain as rare and expensive as it unfortunately is at present. Seed is freely produced in some years, and a single capsule has been known to contain between 80 and 90 seeds, but the process of raising flowering bulbs from seed is somewhat tedious and slow, and takes at least four or five years from the time the seedlings appear, which is sometimes two or three years after the seeds are sown. W. R. Dykes, *Charterhouse, Godalming*.

SCOTLAND.

THE WAVERLEY MARKET, EDINBURGH.

Visitors to the spring shows of the Royal Caledonian Horticultural Society and to the Chrysanthemum shows of the Scottish Horticultural Association in the Waverley Market, Edinburgh, have felt the want of heating apparatus in that huge hall, whilst in some cases exhibits have suffered from severe frost during their exposure in the unheated hall. It is gratifying, therefore, to know that there is a prospect of this drawback being remedied, and that the Markets Committee have made a remit to ascertain the cost of heating and ventilating the market.

NEW RANGE OF HOUSES FOR DUNFERMLINE PARK.

The Carnegie Dunfermline Trust, which has already done so much in the interests of horticulture in that town, has decided to replace the old range of glasshouses in the Pittencrieff Park, Dunfermline, by one of modern design and construction. The old range is unsuitable for the purposes required, and the new houses will be a great improvement from a horticultural, and also from the public point of view. The new range will be of handsome design, the central feature being a Palm-house, whilst along the north side there will be a corridor some 20 feet wide. The contract has been entrusted to Messrs. Mackenzie and Moncur, Ltd., and the price is, we understand, about £4,000. It is anticipated that the buildings will be ready in May.

PRESENTATION TO A SCOTTISH GARDENER.

Mr. James Carson, head gardener to Mrs. Jasper Young, Garroch, Kirkcudbrightshire, who is retiring from this appointment, has received a presentation from a number of his friends, as a mark of their esteem and of their good wishes for his future success.

EDINBURGH CHRYSANTHEMUM SHOW

The next annual exhibition of the Scottish Horticultural Association will be held in the Waverley Market, Edinburgh, on November 16, 17, and 18, 1911.

ORCHID NOTES AND GLEANINGS.

LÆLIO-CATTLEYA MEASURESII.

(*C. maxima* × *L. pumila*).

A FLOWER of this pretty hybrid, which was originally raised in the "Measures" collection, and blossomed in 1902, is sent by Mr. H. Haddon, gr. to J. J. Neale, Esq., Lynwood, Penarth, who states that, in this case, the variety *prastans* was used as parent instead of typical *L. pumila*. The flower is equal in size to a good *Cattleya Percivaliana*, and is of similar colour. The sepals and petals are light lilac; the lip, which shows the wavy margin of *C. maxima*, is deep purplish-crimson, with chrome-yellow showing between the lines extending from the base to the centre; the column is white tinged with purple.

DENDROBIUM SPECTABILE.

A VERY fine inflorescence of 11 flowers, borne on a stout spike over 1 foot in height, is sent by Mr. F. J. Thorne, gr. to Major Joicey, Sunningdale Park, Sunningdale. This specimen is the more interesting because it was taken from the plant for which a First-class Certificate was awarded when Mr. Thorne showed it at a meeting of the Royal Horticultural Society on December 19, 1902. The exhibit was illustrated and recorded in the *Gardeners' Chronicle*, December 30, the same year.

The species, which stands almost alone in the genus *Dendrobium*, with its pale yellow, spirally-twisted sepals and petals striped with purple, and its peculiarly elongated white labellum striped and veined with reddish purple, has been known to science for many years, having been figured in Rumphius as *Latourea spectabilis*. The few plants in cultivation were introduced from

New Guinea by Messrs. Sander & Sons, and it is pleasant to see that Mr. Thorne has been successful in growing this reputedly difficult plant for so many years. It requires to be grown in a warm, moist house, and to be kept drier for a time after the growths are completed.

BRASSO-LÆLIA LELLIEUXII

(*B. Digbyana* × *L. anceps*).

A FLOWER of this remarkable hybrid has been sent by Sir John Edwards-Moss, Roby Hall, Torquay, who now has it in bloom. The narrow sepals and the broader petals are 4 inches in length. The labellum, which is folded over the column at the base, has the side lobes and front expanded and finely fringed. The ground colour, which shows most at the bases of the segments, is greenish-white, the greater portion of the outer parts being tinged with rosy-lilac. There is distinct evidence of *L. anceps* in the dark lines at the base of the primrose-yellow disc of the lip and in the form of the sepals. It was first flowered by M. Denis in 1905.



FIG. 185.—CYPRIPEDIUM "KING GEORGE V.": AWARDED R.H.S. FIRST-CLASS CERTIFICATE.

"THE ORCHID WORLD."

THE December issue of this journal contains portraits of Dr. John Lindley and Sir Joseph Banks, with an account of their connection with the Royal Horticultural Society, and pictures of the Lindley and Banksian Medals. Other illustrations include one representing an Orchid house in Java, whilst several specimen Orchids from various collections are shown.

CYPRIPEDIUM "KING GEORGE V."

THIS handsome variety of *Cypripedium* (see fig. 185) is remarkable as much for its beautiful colouring as for the almost perfect development of its floral segments. In some respects it may be likened to the well-known *C. Gaston Bultel*. The dorsal sepal is extremely beautiful, being green at the base with dark lines that merge into a rose shade in the white upper part, which is

also flushed with rose. The prevailing colour in the petals and lip is brownish-purple. The plant was exhibited by Mr. E. V. Low, Vale Bridge, Haywards Heath, at one of the recent meetings of the Royal Horticultural Society, when it was awarded a First-class Certificate by the Orchid Committee.

VEGETABLES.

ONIONS.

THERE is no gainsaying the fact that Onions succeed best in a deep soil, as I have traced Onion roots to a depth of 2 feet. The ground should be deeply trenched in autumn or winter, and, if the soil is not very rich, a quantity of decayed manure should be worked into it, but if it is already rich it is better not to use the dung but add in its place a quantity of slaked lime and wood ashes to the surface soil, forking the ground over several times before transplanting or

seed sowing, in order to mix the ingredients thoroughly together.

An excessively rich soil makes Onions the more liable to the attacks of the Onion fly, and thick-necked bulbs are, in most cases, caused by the soil being too well enriched with dung. Most growers of Onions for ordinary purposes look for their crop from a spring sowing made out of doors. But if the seeds are sown under glass early in the year and pricked out for planting as soon as the weather is favourable, heavier crops are obtained, and the plants are less susceptible to the attacks of the Onion fly. Still, they are not completely immune, for I have lost many a half acre of Onions from the fly, although the plants were raised indoors. It is advisable to make two sowings, one under glass to produce good-sized bulbs for keeping, and another sowing out of doors in March. *Thos. Francis*.

"SOOTY BLOTCH": A NEW FUNGOUS DISEASE OF APPLES.

DURING the past three or four years I have, on several occasions, been told by fruit-growers that Apple "scab" or "black spot" is a disease which will frequently develop on Apples after they are stored. I have been assured that Apples which have been quite clean when put into store will show, when examined after some months, spots of "scab" over their surface.

Now, the true "scab" fungus (*Venturia inaequalis*, syn. *Fusicladium dendriticum*) does not spread from "scabby" Apples to clean Apples in the store-room. An example of a "scabby" Apple is shown in fig. 186; if such Apples are placed adjoining Apples free from "scab," the latter will remain free, however long they are stored. (It may be noted here that while "scab" does not increase in the store-room, "scabby" Apples are, as a rule, soon attacked by other fungi, which cause a more or less rapid "rot" of the Apple—these fungi invading the Apple at places where the "scab" has injured the skin).

As no examples of the alleged "scab" which spreads to clean Apples when stored, were at the time furnished by my informants, I have been puzzled to account for their statements. Re-

cently-published book, *Fungous Diseases of Plants*, by Prof. B. M. Duggar, a most life-like illustration is given of both "sooty blotch" and "fly speck," together with the following remarks:—"According to the unpublished observations of Floyd, the sooty blotch and the fly speck are apparently stages of the same fungus. They seem to occur upon the fruit of the Apple throughout the limits of its culture. A sooty blotch and a fly speck are also found upon the Pear, and along a roadside near Columbia, Missouri, there were found more than 25 hosts affected by what was apparently the same fungus. These plants were all woody in texture, and the fungus occurred generally on the younger twigs and petioles. Observation indicates that the organism is most abundant under conditions of considerable moisture, half shade, and abundant dust. The market value of Apples is affected by the discolouration which results. . . . In the case of the blotch, as the season advances, the cell-aggregates may develop a definite sclerotia-like body. By March, this body has differentiated into a pycnidium, 25 to 100 μ in diameter, of the *Leptothyrium* type, bearing hyaline, elliptical spores. The latter measure 12-14 by 2-3 μ ."

In another account, *Diseases of Economic Plants*, just published by Dr. F. L. Stevens and Mr. J. G. Hall, "sooty blotch" is ascribed to the fungus *Phyllachora pomigena*, and "fly speck" to *Leptothyrium pomigena*. Sooty blotch is described as follows:—"Irregular sooty-black blotches, especially conspicuous on the lighter-coloured varieties, are frequently seen on unsprayed fruit. . . . The fungus attacks the fruit late in the season, and is strictly superficial. It may be easily rubbed off with a cloth. The loss in ready saleability, due to the unsightliness of the fruit, is reason enough for protective spraying. Bordeaux mixture, applied at intervals of about two weeks, from the middle of June until the middle of August, is effective." The following remarks are made concerning fly speck:—"This disease causes disfigurement of

Where the disease appears, systematic sprayings with Bordeaux mixture (4 lbs. copper sulphate, 4 lbs. quicklime, 50 gallons water) should be given except on Cox's Orange Pippin and Duchess's Favourite. Besides the two applications of this mixture, given just before and just after the blossoming period—which are necessary to keep down "scab"—a light spraying during August should be given experimentally. Since the above was written, further specimens of "Newton Wonder" affected with "sooty blotch" have been brought to me by Mr. R. Wellington (one of the Kent County Council's inspectors for Gooseberry-mildew) from a fruit farm near Maidstone. *E. S. Salmon, F.L.S., South-Eastern Agricultural College, Wye, Kent.*

NOTICES OF BOOKS.

A NEW WORK ON DAFFODILS.*

THE advent of the Daffodil book in the series of volumes issued under the title of "Present-Day Gardening" will be welcome to many. Some may ask is there room for it? Those who associate themselves with the cultivation of the Narcissus have no hesitation in answering—Yes. There can hardly be too many works dealing with special branches of gardening when they are

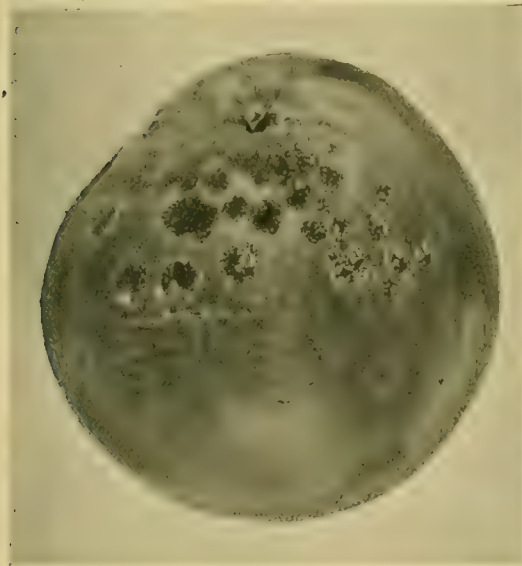


FIG. 186.—PEASGOOD NONESUCH APPLE ATTACKED BY "SCAB."

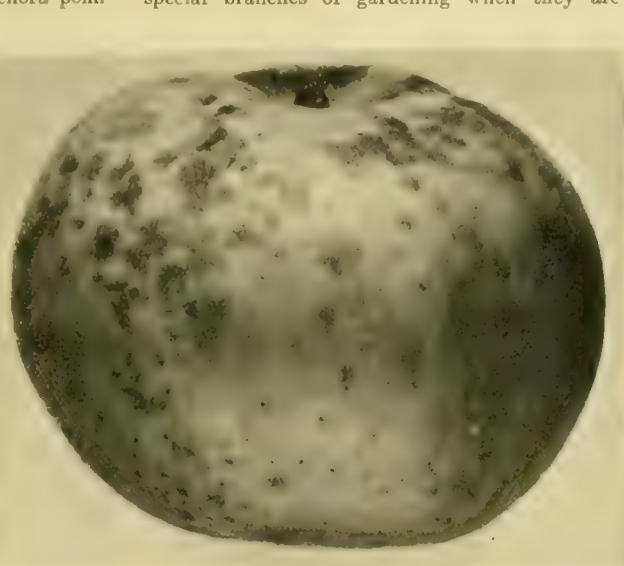


FIG. 187.—NEWTON WONDER APPLE ATTACKED BY "SOOTY BLOTCH."

cently, however, certain facts have come to light which explain the matter. During this autumn Mr. W. B. Burgess, B.Sc., of the Horticultural Staff of Wye College, brought me some Apples (gathered from trees in the College fruit plantation) showing sooty-looking blotches on the skin. On microscopical examination these proved to be a species of *Leptothyrium* not previously recorded for this country. These sooty blotches—which can be seen in the photograph reproduced in fig. 187—are more or less rounded, $\frac{1}{4}$ inch, or under, in diameter, and sometimes coalescing to form larger patches. They are composed of straggling threads (hyphae) of the blackish spawn (mycelium) of the fungus. This spawn is wholly superficial, but grows so closely attached to the skin of the Apple that the sooty patches cannot easily be wiped off by a damp cloth.

On the same Apples, near the sooty patches, minute black spots, usually collected in groups, and very closely resembling fly-spots, were noticeable. These proved to be minute, compact, circular masses of spawn (mycelium), of a shining black colour. No spores are formed on these spots. The name "fly speck" disease has been given in America to this fungous growth.

The "sooty blotch" and the "fly speck" are comparatively well-known diseases of the Apple and other fruits in America. In that excellent,

the Apple. Though the disease is of very wide distribution, the loss occasioned by it is not serious, and is almost entirely prevented by the sprayings employed against other diseases."

With regard to the occurrence of these diseases in this country, noted above, they were first observed in October last on Apples on the tree, and subsequently in greater abundance on Apples stored in the fruit-room. The most severely attacked variety has been Newton Wonder; but Seaton House and many other varieties have also been found infested. Pears also have been attacked. It is quite clear that "sooty blotch" is a disease which spreads on stored Apples; it is this disease, undoubtedly, which has been confused by some growers with "scab."

It is regrettable that a new fungous disease has to be added to the list of those that attack the Apple in this country. It would be interesting to know if—like the American Gooseberry-mildew—the "sooty blotch" fungus has been imported into this country from America. I have frequently noticed this and "fly speck" on American Apples on sale in our shops. If "sooty blotch" becomes common in this country, it is likely to prove troublesome by damaging the look of well-grown Apples, and thereby interfering with the practice of marketing the best Apples in boxes.

written by those who are experts in the subject on which they write. There is a wholesome freshness about such books, and even the expert himself is sure to find some information which is new and useful.

That the author of "Daffodils," the Rev. Joseph Jacob, knows what he is writing about is beyond dispute, and as he also knows how to express himself tersely and clearly, he has produced a valuable volume. It is divided into sixteen chapters, each chapter dealing with some special section. The author gives a condensed history of the literature and position of the Daffodil from Gerard's *Herbal*, in 1597, to the present day. The condensed form in which this information is given will be appreciated in these strenuous days. But the chief charm of this volume is that it can be studied with advantage by skilled cultivators as well as by the merest tyro. The directions in Chapter IV, dealing with cultivation are excellent. In fact, all through the book the author places at the disposal of his readers valuable facts acquired by years of careful study and observation, and the record of failure as well as of success testifies to the candour of the writer.

* *Daffodils*, by Rev. J. Jacoby, Vol. IV., in "Present Day Gardening" series. (T. C. and E. C. Jack.) Price 1s. 6d.

The chapter on cross-breeding contains, in the 12 pages devoted to it, facts which will save beginners a vast amount of unnecessary and profitless work, and to it the experienced breeder will frequently turn to save hunting through notebooks. This chapter alone would justify the appearance of the work.

When dealing with classification a more thorny subject has to be handled. There seems no reason why the author should be anxious about the opinions of the "strict botanist," as that individual will hardly trouble as to the classification of many-degreed mongrels. A much more serious matter is how the new classification of the R.H.S., published in Chapter X., will be received, and we are inclined to sympathise with the author in his doubts as to whether it will be received with general acclamation. The younger societies and exhibitors will be inclined to look askance at it, and to regard it as unnecessarily cumbersome and complicated. Why should Divisions II. and III. be separated? Similar shapes are "lumped" in Division IV. How long will the dividing line continue?

A valuable feature in the book is the chapter giving lists of varieties for various purposes. List No. 1 will for some time have interest only for the millionaire, but the others are of interest to every grower. There are some notable omissions, or rather exclusions, from these lists. For instance, from the list for gardens, Golden Spur, one of the best bedders in existence, is missing. It may further be submitted that Emperor, Empress and Sir Watkin may, without disadvantage, be included in all large groups on the show table. The list for pots is rather meagre, and those who have much decorative work to do with pot-grown Narcissus will wonder whether Emperor, Sir Watkin, Barrii Conspicuus, and Poeticus ornatus are inferior to some of those named in the list. The calendar of operations goes fully into details of all work necessary throughout the year, from August to July, and the author's oft-repeated advice to plant early cannot be too strongly recommended to the consideration of the reader.

The volume is nicely brought out, clearly printed on good, strong paper, and there are eight excellent coloured plates illustrating some of the choicer varieties, but Plate VI., illustrating Lord Roberts and Judge Bird, scarcely conveys a correct impression of these two fine varieties. F. W. Moore, Glasnevin Botanical Gardens.

MORPHOLOGY OF GYMNASPERMS.*

BOTANICAL students are already indebted to Messrs. Coulter and Chamberlain, of the University of Chicago, for an admirable treatise on the morphology of flowering plants, published in 1901, and their indebtedness will be considerably increased when the present volume on the morphology of Gymnosperms comes into their hands. Messrs. Coulter and Chamberlain have produced a work which is no mere compilation, but one which is, in a large measure, the outcome of investigations which have been carried out by themselves and under their direction.

In no branch of botanical science have investigations been more numerous during the past ten years than in that dealing with the Gymnosperms, and, as a result, our knowledge of the group has been not only increased, but consolidated. This extension of our understanding of an important group of plants has been the more striking owing to the fact that research work has been carried on along parallel lines. On the one hand, the existing species of Conifers, Cycads, Gnetum, and Ephedra have been subjected to a searching examination, and, on the other hand, many fossil forms, and particularly those connecting the Cycads and the Ferns, have been discovered or re-investigated in recent years, with the result that new light has been thrown on the relationships of existing Gymno-

sperms, both with one another and with other of the great groups of plants.

The story of this progress is admirably told by Messrs. Coulter & Chamberlain, and will be read with great interest by all students of morphological botany. The book, admirably printed and profusely illustrated, concludes with a chapter on evolutionary tendencies among Gymnosperms, in which it is suggested, on what appears to be strong evidence, that the Coniferous plants and the Cycads are descended from ancestors which were already widely separated in carboniferous times.

TREES AND SHRUBS.

VERONICA HULKEANA.

THIS is quite the most beautiful and delicate of all the Veronicas that can be grown in pots. The flowers are of the palest lavender colour, and are borne in short racemes ranged on shoots up to about 1 foot long. The habit of the plant and the floral arrangement are well shown in fig. 188, which is reproduced from a photograph,



FIG. 188.—VERONICA HULKEANA AS A POT PLANT.

for which I am indebted to Mr. E. J. Allard. I have always found this to be a very good pot plant, most lovely for the greenhouse. Mr. Bowles strongly recommends it to be planted out-of-doors in a sheltered corner, but I have had it, with a great number of others, in the shelter of plant-house walls, and have always found it most satisfactory as a pot plant. It is a native of New Zealand. R. Irwin Lynch, Botanic Gardens, Cambridge.

COLONIAL NOTE.

ERYTHRINA PARCELLII (Hort.).

IN the original description of this species, which is contained in the *Gardeners' Chronicle* for September 26, 1874, p. 392, fig. 82, the flower is described as "of a bright cinnamon-red colour." We have recently flowered this species, which appears to be very rare. The flowers in our specimen are white. The filaments are dull crimson, and there is a little of the same colour along the external margins of the buds. J. H. Maiden, Director, Botanic Gardens, Sydney.

FRUIT-TREE STOCKS.

MR. H. SOMERS RIVERS contributes the following information on this subject, thus supplementing his paper read at the Northern Fruit Congress, and published on p. 325.

It is, as we have seen, scarcely necessary for us to go to the frosty Caucasus for the original Paradise stocks. It may, however, be interesting to note what has been said as to this.

W. Lauche, *Handbuch des Obstbaues*, 1882, gives six families of the Apple, the sixth being: *Pirus pumila*, Mill. Stranch-apfel [Shrub-apple]. *P. Malus* β *paradisica*, L.; *P. praecox*, Pall.; *P. Sieversii*, Led.; *Malus praecox*, Borkh. South-east Russia, Caucasus, Tartary.

A bush, with elliptical leaves, woolly underneath. The reddish petals with a very short claw; style glabrous, not longer than the anthers. Fruit reddish or yellowish, austere.

He goes on to say that Koch distinguishes:

1. *Johannis-apfel*, which may be known by its being very hairy, the twigs having shining brown bark, and by its brittle roots. Generally found in Dutch nurseries, it throws up many more suckers than the following.

2. *Spittl* or *Süss-apfel* (Douxin of the French) has woolly hairs on the young shoots and on the undersides of the leaves. These are rounded at the base. Generally to be found in the French nurseries, where it is used as a stock for dwarf trees. The "englische Spittl-apfel" (common Codlin) seems to be only a variety of this.

The only variety mentioned in L. Adon's *Encyclopaedia of Trees and Shrubs*, 1842, is *P. Sieversii*, under "Species of Which There are Only Very Young Plants in British Gardens,"

a bush, with many stems rising from the same root; with ovate leaves, rather tomentose; and umbellate flowers, succeeded by very acid fruit. A native of Siberia.

Koch, *Die Deutschen Obstscholze*, 1876, seems to be the chief German authority on stocks. He says:—

It appears that the Doucin is of Italian origin and was first brought to notice by Agostino Gallo during the first Century following the middle ages. He mentions two forms, *Dolciano Nano* and *Dolciano Mezzano*, meaning the dwarf and the semi-dwarf sweet apple. We do not know when the Doucin was brought to France, but it was probably introduced soon after it became known in Italy.

If this is correct, possibly *Dolciano Nano* is the French Paradise, *Dolciano Mezzano* the Doucin, and Italy the birthplace of both. Koch says the French Paradise was known in France as early as the beginning of the 15th century. Is this earlier than the somewhat vague first century following the middle ages?

Quite a wrong statement may easily be made through misapprehension of names: thus E. G. Lodeman, in *Bulletin* 116 of the Cornell University, 1896, cites Parkinson as mentioning the Doucin in *Paradisus Terrestris*:—

The Deusan or apple John is a delicate fine fruit, well relished when it beginneth to be fit to be eaten, and endureth good longer than any other apple.

This obviously does not refer to the stock at all, but to the "Deux Ans" Apple, thus christened because it keeps longer than one year. Hogg gives John Apple as a synonym of Northern Greening and also of French Crab.

In Germany, Crabs are commonly called *Paradiesäpfel*, as well as *Kirschäpfel* (Cherry-Apples). It is also a synonym of several different Apples. Thus, in Simon-Louis's *Guide Pratique*, 1895, we find:—

1. *Paradies Apfel* (through error) = *Calville blanche d'hiver*, an old variety, much esteemed especially in France, but the fruit of which is apt to get spotted especially in wet years. The tree has a delicate constitution and is fit only for growing as a bush, espalier or on walls.

2. *Paradies apfel* = *Rambour franc* which makes a very vigorous and fertile tree suitable for standards.

Hogg, in the *Fruit Manual*, says:—

This is an old French apple which must have been long cultivated in this country, as it is mentioned by Rea so early as 1668. It is supposed to take its name from the village of Rembures, in Picardy, where it is said to have been first discovered.

3. *Paradies apfel* = *Rother Eiserapfel*, a very large tree, healthy vigorous and a great cropper.

I do not identify this as any variety we grow in England.

4. *Paradies* (cf. some) = *Thorle d'été* [Whorle Pippin, Hogg], a vigorous and fertile tree which flowers very late. An English apple, much grown in Scotland.

5. *Rother Paradies Apfel* [Red Paradise] = *Calville rouge d'automne*, a vigorous and fertile tree, suitable for orchards.

* *Morphology of Gymnosperms*: Coulter and Chamberlain, University of Chicago Press and Cambridge University Press; pp. 458, with 462 figs.; 16s. net.

Of these, the last four are all distinguished by their highly-coloured fruit, vigorous habit, and great cropping qualities.

In England, judging by Hogg's *Fruit Manual*, we have only one Apple which is given this name:—

White Paradise (Lady's Finger; Egg; Paradise Yippin) a second-rate, but beautiful and handsome dessert apple; in perfection the beginning of October, but towards the end of the month becomes dry and mealy. It is, I believe, a Scotch apple and much grown in some districts, particularly in Clydesdale, where it is known by the name of Egg Apple, and where the fruit lasts longer than when grown in the warmer climate of the south.

André Leroy, *Dictionnaire de Pomologie*, 1873,

years before (1546) Ruel's *Natura stirpium* was of different opinion about this same fruit which he thought he recognised in the "Melmell's" or the "Mustées" also mentioned by Pliny, who confined himself to stating of the first, that their flesh "had a honey-flavour" and of the others "that they ripened early." If I had to judge between these two opinions, I would rather accept Ruel's as far as the "Melmelles" are concerned since our Paradise apples have a honeyed taste.

Without troubling ourselves further over a point which it is impossible to settle, I will pass on to less problematical assertions.

The present keeper of the Archives of the Seine-Inférieure, M. Robillard de Beaurepaire, whose work *Etat des campagnes de la Haute Normandie au moyen âge* contains valuable information about our ancient fruits, tells us "that in this country, in the time of Champier (1472) the Paradise apple, was with the

Paradise is not a name which has been given much to other fruits than the Apple. Leroy mentions two Pears: Paradis d'Automne, a synonym of Beurré Bosc (Thompson, *Catalogue of Fruits, Hort. Soc. Lond.*, 1842) and Paradis d'hiver or Virgouleuse (Mayer, *Pomona francoica*, 1776-1801).

The Plum tree of Paradise is spoken of by Leonard Mascall (*The Country-Man's New Art of Planting and Grafting*, 1652), as being one of the trees which

take root prick of branches,

but I find no other reference to this variety. It is curious that Apples on Paradise, Pears on Quince, and Cherries on Mahaleb give excellent and large fruits, but when it comes to a dwarfing stock for Plums or Peaches, the stock which reduces the size of the tree also affects the fruit and makes it much smaller. Such are the Mirabelle de Nancy, Damas de Toulouse, Mariana, &c., which have all been tried and found wanting. A good dwarfing stock for Plums has yet to be invented. H. Somers Rivers.

BIRMINGHAM BOTANICAL GARDENS.

NOVEMBER is certainly not an ideal time to see a garden at its best. Nor does one expect great floral displays in a botanic garden, though during recent years this phase of the subject has received greater attention than formerly. Hence, at Birmingham, as at Kew and other similar places, we see, even in winter, plenty of flowering plants in the glasshouses. Among noteworthy examples, I noticed at Edgbaston handsome bushes of *Salvia splendens grandiflora*; whilst *Chrysanthemum*, if one might judge of the evidence of bud and blossom, will hardly have passed out of flower before the end of the year. Varieties were numerous, and I was pleased to see that many single-flowered sorts are grown. A more unusual feature was seen in a batch of hybrid *Gesneras*, in which the richness and brilliance of their floral parts were emphasised by crimsoned leaves of sable-like softness. *Gesneras* are autumn-flowering plants, which are easily raised from seeds, and they are certainly desirable in the warm greenhouse at this season: the hybrids had a compact, pyramidal form, and grew 12 to 13 inches in height. *Begonia Haageana* was in excellent bloom, as might well be said of it, indeed, at any time within three months of its starting to flower, so great and so profuse is the yield. Attractive in its leafage as well as continuous in flowering, it is a plant for these gardeners to note who require subjects of exceptional merit. The examples of richly-coloured *Codiaeums* (*Crotons*) evidenced high culture. *Pandanus Sanderæ*, as here seen, is an imposing plant indeed. Any exhibitor of fine foliaged plants might well desire such an acquisition, which, apart from high class culture, only requires age to bring out its finer characteristics. The yellow-flowered *Allamanda Williamsii* was interesting at the moment, because of its maturing seed-pods, the latter being copiously armed with spines 1 inch in length. Excellent specimen plants of the mottled-leaved *Dracaena Godseffiana* were noted, as were many other species of plants too numerous to mention in detail. The *Victoria regia* had commenced to decline, albeit a handsome flower in the mature stage was still to be seen.

One of the most interesting subjects noted was *Agapetes* (*Thibaudia*) *macrantha* (see fig. 62 in *Gardeners' Chronicle* for April 21, 1894, p. 501), in a good plant 6 feet in height, and bristling with flower-buds from base to summit. This hardwood subject possesses the peculiarity of producing its flower buds from practically all its parts, the sides of the inch-thick stems within an inch or so of the soil being as freely studded with flower-buds as any other part of the plant. Its fully-developed flowers are shaped like a Chinese lantern, and are curiously veined with red. *Dicksonia Lathamii* (*D. arborescens* × *D. antarctica*), with its 11-foot-high trunk and 15-foot-6-inches wide spread of fronds, while reflecting the highest



FIG. 159.—FRUIT-CAPSULE OF ALLAMANDA.

See "Birmingham Botanical Gardens."

gives three Paradise Apples, all different to those previously mentioned, all large, highly-coloured fruits of very fertile trees.

Paradis d'hiver, a synonym of Rouge de Stettin, and Paradis rouge synonym of Cœur de Bœuf and of Roi Très Noble (also called Calleville rouge d'Automne in error).

The following is his account of—

Pomme de Paradis. Synonymes—Pomme 1 D'Arbre Nain (John Gerard, *The Herbal* 1597)—2 Apple le Lectier, of Orleans, Catalogue 1628, and Dalehampt. *Histoire générale des plantes* 1651.

In the first century of our era Pliny mentioned in his *Historia naturalis* (book xv) an apple called Petisienne "recently introduced in Rome, small, but with a very agreeable flavour." Charles L'Estienne, basing his theory on this passage alone, thought in 1546 (*Seminarium*) that the variety we call Paradise must be identical or nearly so with this Petisienne. A few

Blanc-Dureau and the Capendu [or Court-Pendu gris] the most esteemed apple."

It also occurred in these olden times, in the Midi de la France, since Jean Bauhin, who wrote before 1613, alleges he received it from Lyon and from Montpellier. He says too it was grown in Switzerland at Bâle and Geneva (*Hist. natur. plantar*).

It was, we think, towards the middle of the 17th century that the practice of grafting other apples on the Paradise, to obtain dwarf trees, began. . . . If I were asked why the fruits of this prototype of the dwarf apples were called Paradise-apples, I should quote, naturally with all reserve, the assertion of the naturalist Tragus of Strasburg, *Historia stirpium* 1552, "The latin poets tell us that the apple which Adam and Eve bit into so covetously belonged to this variety, from which it follows that it was subsequently given the name of the place then inhabited by them, the terrestrial Paradise."

This is rather a curious method of reasoning.

credit on present-day cultivation, is a monument to the skill of the former curator (Mr. Latham) whose name it bears. The plant is not now the only specimen, for smaller examples were also noted. *Nepenthes* of many kinds were in excellent condition, and the same may be said of a choice collection of Orchids, of which *Sobralia Elizabethæ*, *Cypripedium grande*, *C. bellatulum*, and others were remarked.

To the noble examples of *Gleichenias*, however, belong the pride of place, not merely because of the giant proportions which render them practically, if not, indeed, absolutely, unique, but equally because of their rude health and luxuriance, qualities which none but growers of these rare Ferns could appraise at their worth. I have seen large examples of *Gleichenias*

PEARS AT LOTA LODGE.

THE photograph of Cordon Pear trees in fruit (see fig. 190) was taken in the gardens of A. F. Sharman-Crawford, Esq., Lota Lodge, Glanmire, Co. Cork. The variety is Fondante de Thirriott, and in a length of stems totalling about 24 feet there were 120 fine fruits. The trees were planted five years ago when the garden was made, previous to that time the field had not been tilled for at least 60 years. The wall fruit trees were planted immediately afterwards. The soil was trenched 3 feet deep; this process involved bringing the subsoil to the surface, but the trees themselves were planted in loam of a good texture. Every season some of the trees have borne fruits, and this year all the

THE DESTRUCTION OF RATS.

ON account of the general desire to reduce the number of rats in this country, we reproduce the following information which has just been issued by the Board of Agriculture and Fisheries, in Leaflet No. 244.

Two kinds of rats are found in Great Britain, the Black Rat (*Mus rattus*), and the Brown Rat, sometimes called the Hanoverian or the Sewer Rat (*Mus decumanus*). The former, which has been longer established in this country, is the smaller of the two. It is more lightly built, but its ears are slightly larger, and it has a thin tail 8 or 9 inches long, or about 1 inch longer than the rest of its body. The upper part of its fur is of a grey-black colour, the under parts being a dark grey. The brown rat is generally longer in the body, but shorter in the tail, which is never as long as the head and body combined. It has a blunter muzzle, and its fur is grey-brown above and white below. The fur of the brown rat, moreover, is rather coarser than that of the black rat.

The females of both species breed at a very early age, and though they go with young for six weeks they have several litters in the year, each litter comprising from six to 14 young. Rats, therefore, increase in numbers very rapidly if sufficient food is available. It has been calculated that in India, where they breed all the year round, the offspring of a single pair would, if supplied with sufficient food and left unchecked, amount at the end of one year to 35,000. Fortunately such favourable conditions are never present.

Rats are omnivorous feeders, and when desperate with hunger are even cannibals, but they are by choice dependent on the food supplies which man prepares for himself and his domestic animals, or on the waste of such food. Many estimates have been made of the damage done by the rat population of Great Britain in a single year, but as these estimates are based on the assumption that the supplies consumed by rats would otherwise be available for human use or consumption the reasoning is unsound. It is, however, generally admitted that the damage done is incalculable. Rats frequent dwelling houses (generally only the lower floors), barns, granaries, poultry yards, slaughter houses, sewers, and other places where food supplies are stored, or the waste is thrown away. They also frequent rabbit warrens, and take to the fields when food is to be found there, returning to shelter and to breed in corn stacks in the autumn.

Apart from the food consumed by rats, much damage is done to buildings, floors, and other kinds of woodwork from their power of gnawing holes and passage ways. It is also known that the disease called plague may be spread to human beings by fleas from infected rats.

It is, therefore, highly desirable, both from an economic and a sanitary point of view, that rats should as far as possible be destroyed. It would, of course, be well if they could be entirely exterminated in Great Britain, but this is practically an impossibility. During the period of nearly 200 years that has elapsed since the Brown Rat was introduced into this country, it has penetrated to the remotest parts of the British Islands, and is to be found in many ruined buildings and other places from which it would be difficult to dislodge it. Since rats can live on garbage, travel over wide areas, and breed very rapidly, a few pairs allowed to remain alive would quickly re-stock the country, and even if every rat were destroyed, others would undoubtedly be imported in some of the vessels that call at English ports. The expense and inconvenience of exterminating the rat population of this country and preventing re-importation would far outweigh the economic gain to be secured by their destruction.

The destruction of rats is essentially a matter for local effort, and the occasion for the attempt to be made is when the danger of injury from their presence outweighs the probable cost and trouble of killing them. Local effort, however, does not necessarily mean isolated or unsystematic effort. In many places it is true that rats can be kept down by cats, traps, and occasional rat hunts, and this is true of most dwelling houses, especially if the kitchen and outhouses are kept in a clean and tidy state so that the rats find it difficult to procure an abundance of food. It is also true of many farms where the buildings are well kept, but in other cases on



FIG. 190.—CORDON PEAR TREES AT LOTA LODGE, GLANMIRE, IRELAND.
THE VARIETY IS FONDANTE DE THIRRIOTT.

before, but never such specimens as these at Edgbaston. Difficult to successfully cultivate at all times, these plants are still more difficult to maintain in health and vigour when they reach to the specimen size. Of those noted, *G. Mendelii*, was 4 feet across, and 6 feet in height. *G. Spelunce* was about 4 feet each way, and *G. rupestris*, the giant of all, had a diameter and height of 6 feet. Cultivators of specimen stove or greenhouse exhibition plants would view such as these with admiration. Mr. Humphreys and his staff, who are responsible for such high excellence in plant cultivation, have reason to be proud of their handiwork. E. H. Jenkins.

Pear trees fruited freely, particularly those trained on the diagonal cordon system. Peaches and Plums have also carried heavy crops. The ripening of the Peaches was much impeded by want of sunshine in August, the rainfall for that month at Glanmire having been 6.00 inches, and the number of rainy days 25. The most prolific varieties of Pears in these gardens last season were Doyenne Boussoch, Beurré Fouquieray, Marie Louise d'Uccle, Pitmaston Duchess, and Doyenné du Comice as cordons, while Souvenir du Congrès, Beurré d'Amanlis, Durondeau, Beurré Rance, and Emile d'Heyst are very productive on trees trained on the horizontal system. A. P., Cork.

farms, or in mills, malthouses, and other establishments where large supplies of food are stored, especially where several such buildings stand close together, combined effort is essential. In these cases the formation of a Rat Club such as is described in Leaflet No. 84 is desirable. It is customary in such cases for all the large occupiers of land in a given district, generally comprising several thousands of acres at least, to offer a small reward for every rat killed within the district, the tail being produced as a proof of slaughter. Occasionally, however, it happens that for sanitary or other reasons, especially when rats have been allowed to breed undisturbed for a long time, it is considered important to attempt the extermination of rats over a much wider area, and in this case a more elaborate organisation is required. The following observations and suggestions may be found useful to those who propose to organise such a campaign.

There are three methods which may be employed in the destruction of rats:—(1) Hunting; (2) Trapping; (3) The use of poison or rat virus. There is not much to be said about the first of these methods. Most residents in the country are acquainted with the ratting instinct of terriers, and with the employment of ferrets, and a knowledge of the practice can better be obtained by experience than by description. As regards traps, the spring trap which kills the rat at once when the spring is released is the best, but care must be taken to see that no other animal is caught, and traps should therefore be visited frequently. Another kind is the wire trap, on the eel-basket principle, which the rat can enter easily when attracted by the bait but cannot leave.

Rat poisons are sold in all country towns by chemists, and several patent or proprietary poisons are advertised in agricultural and other newspapers. They are generally composed of phosphorus paste or arsenic, but strychnine may also be employed, while the use of barium carbonate has also been recommended.* Plaster of Paris is sometimes used mixed with flour, which sets into a hard mass in the rat's stomach. It must be remembered that rats are very suspicious, and if they find that any number of their fellows die after eating any kind of food they will avoid such food for some time. It will be as well, therefore, to vary the form and appearance of the poisoned bait at intervals. Thus, after using poisoned bread for a while, oatmeal similarly treated should be used.

Apart from the risk of a possible prosecution under the Acts which deal with the use of poisoned grain, meal, or meat, it is very necessary when using poisons to take precautions to avoid injury to other animals and human beings. (The Acts concerned are the Poisoned Grain Prohibition Act, 1863, and the Poisoned Flesh Prohibition Act, 1864.)

In any case poisoned baits should only be laid

by authorised and responsible people. Their whereabouts should be carefully recorded, and they should be visited regularly and destroyed if not taken within a short period. The strictest precautions should be taken to prevent the bait being eaten by domestic animals, and if necessary notices should be exhibited in places where baits are laid to warn people to keep dogs or other animals away from the place. When poisoned baits are laid by a Rat Club or other organisation, it would be as well to insist that each group of baits should be numbered, and its situation, suc-

to the fact that, if only slightly infected, rats recover and thereafter become more or less immune to the disease.

It cannot be too strongly urged, therefore, that if there is to be a successful attack upon rats in any district, reliance should not be placed in any one of the methods referred to above, but that as far as is possible under the circumstances *all these methods should be employed*. Rats are intelligent animals, and will soon learn to evade any one of these devices, and will even vacate for a time the district in which they are being harried. If, therefore, it is proposed to exterminate the rats in a large district, means should be employed whereby this intelligence can be used to compass their destruction. With this object combined efforts should be made over a wide area, and the attack made in a circle radiating from a given spot in which it is considered that the final work of destruction can be accomplished with least difficulty. Rat hunts should be organised simultaneously on the circumference of this circle, traps and poison should be laid on the outside and food supplies in the centre to which the rats should be driven. Every precaution should be taken to see that no rats escape outwards, and their holes should be closed, and their runs and nests destroyed as the circle is gradually drawn closer. Finally, when a broad band at the circumference has been cleared, poisoned food should be employed in the centre, and virus laid where the rats can take the disease.

UTRICULARIA PREHENSILIS.

AN aquatic plant with flower-shoots twining above the water is sufficiently uncommon in gardens to merit illustration in the *Gardeners' Chronicle*. *Utricularia prehensilis* (E. Meyer), which is now flowering freely in a warm greenhouse in the Royal Botanic Garden, Edinburgh (see fig. 191), is a species from Tropical and South Africa and Madagascar, and has been figured by Dr. Stapf in Hooker's *Icones Plantarum*, plate 2,798. Whilst not exactly a decorative plant, the profusion of yellow flowers upon it attract attention. To the botanist, however, and particularly to the teaching botanist, it is a plant of interest, since it offers him an easily-grown species of this interesting genus for the study of the curious morphological features which it exhibits. The plant produces riband-shaped leaves, which float on the water surface, and, from amongst them, as will be seen in the illustration, the flower-shoots rise in numbers. The growth is rapid, and the plant soon covers a large area. The crop in cultivation in Edinburgh has all come from a single seed obtained from a small South African collection of plants which arrived in the summer of 1909. I. B. B.

CORNUS CAPITATA.

ISOLATED specimens and groups of *Cornus capitata*, Wall., are to be found in many valleys in W. and N.W. Yunnan; in the Salwin Valley, lat. 27° N., it is fairly common, but in no part is it so abundant and free-flowering as in the Lichiang Valley and along the base of the eastern slope of the great Lichiang Range, 27° N., neither is it found at such an altitude, namely, 8,200—9,000 feet, in any other district. There, for a stretch of 10-12 miles, almost from the southern extremity of the valley, are colonies hundreds of acres in extent. One of the principal watercourses irrigating the plain is densely bordered with this plant, and, during the flowering season, the watercourse, as seen from the hills, appears as a line of yellow-white from the dense masses of bloom. The average height of the trees is about 40 feet; occasionally a large specimen, generally isolated, may be seen of 50 feet or 60 feet; in most cases, when viewed separately, they are symmetrical in habit.

I know of no tree or shrub in Yunnan more prodigal of bloom; it forms masses of distinct colouring of a delightful soft shade of lemon-



FIG. 191.—UTRICULARIA PREHENSILIS IN EDINBURGH ROYAL BOTANIC GARDEN.

cess, or failure and ultimate destruction recorded in a book.

Rat viruses, on the other hand, of which there are several on the market, can be used without fear of direct injury to any animals other than rodents. These viruses are believed to be composed in every case of a culture of a microbe causing a specific disease of rats, which in some cases at any rate is contagious, so that the inoculated rat conveys the disease to his fellows. The uncertainty with which this method is attended is due partly to the difficulty of securing a successful infection in all cases, and partly

* A recent bulletin published by the United States Department of Agriculture discusses the relative merits of arsenic, phosphorus, strychnine, and barium carbonate as rat poisons. Arsenic is cheap, and, perhaps, the most popular poison for the purpose; but experiment showed that, measured by the results obtained, it is dearer than strychnine. It is variable in its effects. One part of arsenious acid may be mixed with 12 parts by weight of oat or Maize meal and made into stiff dough with white of egg. Phosphorus is almost as commonly used as arsenic, and is effective when mixed in an attractive bait; but in the paste forms, which contain from 1 to 4 per cent. of yellow phosphorus in glucose and other substances, the lower percentage is too small to be always effective, and the larger amount is dangerously inflammable. Many fires have been caused by phosphorus paste in the United States, and the Biological Survey does not recommend its use. It is said that there is no foundation in fact for the statement that phosphorus dries up or mummifies the body without odour when eaten by rats or mice. Strychnine may be effectively employed in the open and round farm buildings, but it is too rapid in its action for use in houses, as the vermin would die on the premises. Dry crystals of strychnia sulphate may be inserted in portions of raw meat, sausage, or fish, and these placed in the burrows. Strychnine syrup may be prepared by dissolving 1 oz. of the sulphate in 1 pint of boiling water, and stirring in 1 pint of thick sugar syrup; this may be used to moisten a bait of oatmeal, while Wheat or Maize may also be soaked in it. In all cases it is advisable that baits containing one of the above poisons should be obtained ready prepared from a pharmaceutical chemist. Barium carbonate is considered one of the cheapest and most effective poisons for rats and mice. It is without taste or smell, has a corrosive action on the mucous lining of the stomach, and, causing thirst, induces the vermin to seek water in the open, where they die. In the small doses used it is said to be harmless to domestic animals. It may be employed in the proportion of one part of the carbonate to four parts of meal, mixed to a dough with water. A convenient bait is composed of one part by measure of the mineral to eight parts of oatmeal, mixed to a stiff dough. The carbonate may also be spread on fish or moist toasted bread. In 1905, large quantities of a poisonous food were sent out by the Agricultural Botanical Institute at Munich for the purpose of destroying field mice, and it is stated that it chiefly contained barium carbonate.

yellow, the blooms being so large that in many instances little or no foliage is visible.

The fruits, which, when ripe, are dull yellowish-crimson, are edible, being largely partaken of by the natives. They are occasionally exposed for sale in the markets of Tengyueh, Tali, and Lichiangfa. The pulp is sweet, rather astringent, but not unpleasant. The local name for the species is "ghi suddsa hua." *George Forrest.*

The Week's Work.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Surrey.

Lælia pumila.—This pretty species and its several varieties, such as *præstans*, *Gatton Park* var., and *Low's* var., are passing out of flower, and at this stage attention should be given to any which require fresh rooting material. Select small, shallow pans, and make them three-parts full with drainage, using only a small quantity of *Osmunda* fibre and *Sphagnum*-moss, which should be chopped up moderately fine, and well mixed together. After

their depth, then a layer of smaller ones over them, and lightly cover the drainage with rough *Sphagnum*-moss. The compost should consist of *Osmunda* fibre, *Polypodium* fibre, and *Sphagnum*-moss in equal parts, mixing with these materials a moderate quantity of small crocks. Press the compost firmly about the small, fine roots, keeping the base of the pseudo-bulbs slightly higher than the rim of the pot. Afford water very sparingly until roots push out from the new growths. There are many *Maxillarias* that are well worth including in any collection. Such are *M. fractiflexa*, *M. Lindenii*, *M. Amesiana*, *M. præstans*, *M. scurrilis*, *M. Turneri*, *M. nigrescens*, *M. Houtteana*, *M. lepidota*, *M. picta*, *M. fuscata*, *M. Sanderiana*, *M. luteo-alba*, *M. tenuifolia*, *M. stricta*, *M. s. grandiflora*, *M. variabilis*, *M. Mooreana*, *M. elegantula*, *M. ochroleuca*, *M. sanguinea*, *M. phoenicanthera*, *M. Hubschii*, *M. punctata*, and *M. acutipetala*. Established plants require liberal root waterings, and a moderately cool, moist atmosphere when making their growth. A cool, intermediate house will suit them the whole year round, and they will thrive in company with the *Odontoglossums* if they are placed at the warm end of the house, where they will be exposed to rather more light

Species which have bloomed recently, such as *C. Rossiana*, *C. Cumingii*, *C. graminifolia*, and *C. sulphurea* may be repotted if they need this attention.

THE FLOWER GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Hertfordshire.

Eremurus.—The *Eremuri* are amongst the noblest of herbaceous flowering plants. They should be cultivated in a sheltered and warm position, but one that is fully exposed to the light. These conditions may generally be obtained in an herbaceous border, provided the border is of considerable width. The plants should be given prominent positions where the flower-spikes will have their full effect, it being usual to leave the spikes upon the plants until the flowers fade, as they are too large for use in a cut state, in ordinary schemes of decoration. Dig the soil deeply and give it a good dressing of decayed farmyard manure. *Eremuri* may now be replanted, but the work should be done at once, for after the turn of the year the crowns will soon begin to show signs of growth. Remove sufficient soil to allow of the large fleshy roots being laid out evenly and flatly. The crowns, when dormant, should be just covered with soil. As soon as growth commences, I make a practice of covering the crowns with sifted cinder ashes, increasing the size of the mound as growth continues, but care has to be exercised in removing these cinders at a later stage or injury would be caused by late frosts. *Eremurus robustus* and its variety *Elwesianus* are excellent plants: *Elwesianus* is a remarkably fine variety, and it flowers rather earlier than the type. *E. Bungei* has yellow flowers, *E. himalaicus* has massive spikes of creamy-white blooms. (An article on *Eremuri*, by Mr. Elwes, was published in *Gardeners' Chronicle* for August 22, 1910.—Eds.)

General remarks.—Beds containing plants which have been cultivated for providing winter effect, will now be bright with the variously-coloured shoots. The fallen leaves should be removed from the base of the plants in cases where this is possible, but where the growth is very thick they are best left until the plants are cut down again to the ground level in spring, just before the buds break into growth. Beds containing species of *Rubus* may now have the old wood removed; this will give them a neater appearance, and it will be of considerable cultural benefit to the plants. Many upright-growing species of *Rubus* have most attractive stems, which assume various tints of colour, but probably the most distinct sorts are those which are covered with white farina, such as *Rubus biflorus* and others of more recent introduction which closely resemble it. The Japanese Wineberry (*R. phœnicolasius*) is attractive at all seasons, and is a very fine plant for grouping near to the water. The winter effect of this plant is excellent; it is ornamental when in flower and fruit, and the silvery reverse of the leaves when stirred with the wind has an attraction of its own. Another very showy plant, when massed in a clump, is the Sea Buckthorn (*Hippophaë rhamnoides*), the female plants being literally covered with coloured berries. This plant being dioecious, it is necessary that some pollen bearing plants should be planted amongst them. These may be distinguished by the size of the buds.

The water garden.—Where the water-garden is of artificial construction and the water can be regulated as desired, the present is a good time to give it a thorough cleansing, choosing open weather for the work. Let the basin be given a thorough brush out with bass brooms, wheel out the decayed leaves and other sediment, and place the material on vacant ground where it may prove of service. If there are pockets containing Water Lilies and other aquatic plants, these plants must be protected against frosts in the event of their remaining uncovered with water. Any cracks or other defects may be made good. In the cases of natural stretches of water, the surroundings should be made as tidy as possible, removing the leaves and other rubbish from the surface of the water. Let the planting of suitable subjects on the margins of water-courses be completed during favourable weather, exercising a careful choice in regard to the species employed for planting. Many of the willows make very imposing beds if planted in irregular masses; they should be pruned about to the ground level each year.



FIG. 192.—*CORNUS CAPITATA* FLOWERING IN THE LICHANG VALLEY, CHINA.

affording the fresh compost, suspend the plants near to the roof glass of the intermediate house for the winter. So long as the plants continue to make roots, the compost should be kept just moist, but later, very little water will be needed to keep them from shrivelling. Newly-imported plants should be placed in shallow pans and suspended to the rafters, fixing them firmly in the pans with small crocks, and tying one or two of the pseudo-bulbs to the wire handles, in order to steady each plant in the pan. When the new roots start away, a thin layer of the compost should be packed moderately firm around the base of pseudo-bulbs. These dwarf-growing *Lælias* are very subject to white scale, and they should be examined frequently, otherwise these insects will increase rapidly.

Maxillaria.—Such plants as *M. venusta*, *M. grandiflora*, and its variety *Lehmannii* also require attention at this season. If any of the large specimens have become bare in the centre, they may be sub divided and the divisions placed compactly together in new pots or pans, or they may be repotted singly for increasing the stock. *Maxillarias* require exceptionally good drainage, therefore it is necessary to place large pieces of crocks in the pots to nearly half

than is needed for the other inmates. At the same time, they should be shaded rather heavily during hot, direct sunshine. *M. Sanderiana*, owing to its flower-spikes pushing in a downward direction through the soil should be grown in shallow, teak wood baskets, using no crocks over the bottom for drainage, as a free passage for the flower-spikes is essential.

Calogyne cristata.—Plants of *Calogyne cristata* and its several varieties, which have completed their growth are now pushing up flower-spikes. Whilst these are in course of development, the plants must be watered very carefully. Elevate them well up to the roof-glass in the intermediate house, fully exposing them to the light. The pure white *C. cristata hololeuca*, a later-flowering variety than the type species, will still need plenty of water until the new pseudo-bulbs are completed. Occasional waterings with weak cow manure water may be applied until the flowers commence to open. *C. elata*, and *C. ocellata maxima* are also developing their flower-spikes, and they need a plentiful supply of water. *C. flaccida*, *C. tomentosa*, and *C. Massangeana*, now resting in the Cattleya house, will not require much water until the flower spikes appear or new growth commences.

FRUITS UNDER GLASS.

By B. GOODACRE, Gardener to Sir ERNEST CASSELL,
G.C.B., Moulton Paddocks, Newmarket.

Vine eyes.—The propagation of Vines from what are termed "eyes" may be commenced towards the end of the present month. For this purpose, select strong, well-ripened shoots and cut them into pieces about 1½ inches in length, taking care that each piece contains a bud. Pare off the bark on the opposite side of the shoot to the bud, and carefully insert each piece in a small pot containing sandy loam. The pots should be clean, and they should contain material for drainage. The buds must not be buried in the pot, but, on the contrary, they must be so placed as to be clear of the soil. Plunge the pots to the rims in a frame or propagating case where there is a bottom heat of from 65° to 70°, keeping the frame closed for some time, but wiping the inside of the glass each day to remove any moisture that may have condensed upon it. The atmospheric temperature of the house containing the propagating frame should be 60° to 65° at night. When the eyes or cuttings have made roots about 1 inch long they may be inured gradually to the atmosphere of the house by tilting the lights. In the early stages the growth is very tender and easily injured, therefore the cultivator must be exceedingly careful in his treatment of them until they have made growths a few feet long. The young Vines require full exposure to the light, and should be kept near to the glass, but it is undesirable to place them on shelves, as shelves are usually too dry for their well being. Keep the small pots plunged, and spray the young plants gently once or twice each day until they are in a fit condition for being repotted into large pots. Details of repotting and the subsequent treatment young vines require, have been given in previous calendars.

Propagation of Figs.—Although Figs may be propagated by various means, the method that may be recommended is that of taking cuttings of the ripened wood. In gardens where numbers of Fig trees are grown in pots, it is advisable to raise a few young plants each year to replace any which have become exhausted or misshapen. The cuttings are formed from the tops of the shoots, selecting straight, short jointed pieces of wood that are firm and well ripened. Remove a few of the lower buds from these cuttings, and cut them square across the base of the cutting. The cuttings may be about 4 inches long, and they should be dibbled into small pots, putting one cutting in each pot, and using a compost of loam, sand, and leaf-mould. Place the pots in a frame which is provided with bottom heat in the same way as recommended above for the Vine eyes, and treat the cuttings in a similar manner until the young plants are fairly well advanced in growth.

Strawberries in pots.—Place batches of plants indoors as required to provide a succession for forcing, always selecting the strongest plant's first, thus leaving those which are less vigorous until a later date when less forcing will be necessary to induce the plants to start into growth.

THE HARDY FRUIT GARDEN.

By A. R. SEARLE, Gardener to the Marquis of NORTHAMPTON, Castle Ashby, Northamptonshire.

Espalier and cordon trained trees.—In training these forms of trees, those specimens which have already filled the space allotted to them should have their leading shoots pruned to within two or three eyes from the base, and the lateral shoots should be shortened in a similar manner. In the case of any aged trees which have been neglected, it may be desirable to thin out some of the long straggling spurs, removing first those which are longest and most weakly looking. It is not possible to obtain fruits of the best quality from trees which are allowed to become a crowded mass of shoots that offer obstruction to sunlight and air. If the trees are attended to each season with respect to pruning, one of the chief essentials of cultivation will have been carried out. Any tree that showed signs of exhaustion from carrying a heavy crop last season should be given a top-dressing consisting of good loam with a liberal addition of bonemeal. Such a top-dressing may be supplemented with frequent waterings with liquid manure. If any of the trees are growing excessively strong this condition must be modified by root pruning.

Bush and pyramid trees.—Trees trained as bushes and pyramids are frequently selected for growing in the kitchen garden near to the paths or on borders where the space is somewhat limited. In some cases the trees are subjected to hard pruning each year, in order to prevent them from outgrowing their positions. Such pruning, if persisted in, has the effect of producing an abundance of strong growths, but few fruit spurs, and it becomes necessary to prune the main roots. The leading shoots should be pruned to 6 or 8 inches in length according to the space available for them, and all other shoots should be cut back to two or three eyes from the base.

PLANTS UNDER GLASS.

By JOHN DONGHILL, Gardener to JOSEPH PICKETTS, Esq., Bardon Hill, Westwood, Yorkshire.

Solanum.—Amongst berried plants for the conservatory and dwelling rooms none is more effective at Christmas than *Solanum Capsicastrum* and *S. Pseudo-capsicum*. During their growing season both these species succeed best in an intermediate temperature, but in summer they can be cultivated freely in unheated frames with the lights removed in warm weather. In the cultivation of *Solanums* for general decorative purposes I do not recommend planting them out for the summer months in out of door borders. In most cases it is essential that plants used in the dwelling house should be in pots of small sizes, and if the plants are grown in borders it is impossible to get them into small pots in the autumn without causing the roots a very serious amount of curtailment. Again, in northern districts or exposed situations, I have found that the berries do not set so freely out-of-doors. If the plants are grown to their best they are capable of retaining their berries for a considerable period, indeed, well into January. When the last stage is reached and the berries fall, the plant should be pruned back to the hard wood, and be kept somewhat drier at the roots until the branches commence to break into growth again, when they can be potted on for forming larger specimens in the following season. In places where seedlings are raised each year, it is best to sow the seeds as soon as a supply of new seeds is available.

Hamel elegans.—Plants of this fragrant species which were raised in autumn may now be transferred into pots 7 inches or 8 inches in diameter. The plants must not be allowed to suffer from a restricted root area at this stage, or the injuries will be irreparable. Place them in a light, well ventilated position in a warm greenhouse and water them with extreme care, as any error in respect to the supply of water will have disastrous results. Examine the leaves occasionally for insect pests, and fumigate the plants with a nicotine vaporising compound or syringe them with a very weak insecticide should any pest be found upon them. Fix a neat green stake to the main stem, and loop up the axillary growths with raffia-tape. Do not attempt to feed the plants with manures until the pots are well filled with roots.

Forcing house.—Introduce successional batches of retarded crowns of Lily of the Valley and *Spirea astilboides*. *Narcissus Van Sion* and *Narcissus Golden Spur* may also be introduced to the forcing house after the present date with prospects of success. Batches of Tulips if introduced into heat now will provide a display of flowers early in the new year.

General work.—Examine specimen plants now resting with a view to watering any that really require moisture, remembering that excessive dryness at the root causes the wood to shrivel, which is injurious to the well-being of the plants. Great care must be given to the heating of the plant houses just now, preventing sudden fluctuations of temperature as far as possible and high temperatures during dull, dark days. Re-arrange the plants in the stove occasionally with a view to brightening the effect, and remove any ill-looking specimens which may have lost some of their leaves through the exposure of the conditions of dwelling rooms. These may be used for stock purposes in the propagating department. In urban districts where deposits of soot and smuts are found under the glass, the glass should be thoroughly cleansed as often as it becomes necessary.

THE KITCHEN GARDEN.

By JOHN DUNN, Kitchen Garden Foreman,
Royal Gardens, Windsor.

Plants in pits.—Air should be given freely to all plants in pits, such as Lettuces. The decayed leaves should be removed and the ground between the rows stirred with a small hoe.

Parsley and Radishes.—All leaves affected by frost should be removed and a slight dressing of soot given. Radishes may be sown now on a gentle hotbed. It is better practice to sow these by themselves than to mix them with Carrots or other crops.

Seakale.—From this date Seakale roots will force freely, and batches should be introduced to the forcing quarters each week in order to maintain an unbroken supply. It is much better practice to keep up a small, regular supply in this way than to place a large number of roots into heat at one time. Complete darkness and a moist atmosphere are necessary to produce good results with this crop.

Tomatoes for fruiting in spring.—Plants intended for fruiting in spring should be kept as near to the glass as possible, by so fixing the shelves that the tops of the plants are brought within a few inches of the roof. Do not allow the roots to become dry, but take care that water is not afforded unnecessarily. As soon as the first flowers show colour, shift the plants into their final pots, using a compost consisting of fibrous loam, two-thirds, and rough leaf-mould, one third. Provide ample drainage in each pot, and cover the drainage materials with turfy loam. Make the soil moderately firm round the roots, and allow sufficient space at the top for affording a liberal top dressing later in the season. Provided the soil is in a moist condition at the time it is used, it will not be necessary to afford water until the plants are making fresh roots. After that stage the soil should be thoroughly moistened at each watering, nothing being more injurious to freshly-potted plants than frequent dribbles of water. The best place to cultivate these plants is in a pit where there is a gentle bottom heat, but in this case sufficient air must be admitted to prevent the plants from becoming drawn. The atmospheric temperature at present should be 55° at night and 60° by day with ventilation.

Tomatoes in fruit.—These plants should be given occasional waterings with guano water or weak liquid manure from the farmyard. Thin out the side shoots in order to expose the fruits to the light. If the atmosphere of the house should get too moist the fruits will be liable to split.

French Beans.—The batch raised from seeds sown a month ago will now require a top dressing with a compost consisting of fibrous loam and leaf-mould in equal proportions. Make this top dressing firm over the roots, and place a few sticks around each pot to keep the slender plants in an upright position. French Beans require full exposure to the light, and they should not be more than a few inches from the glass. An atmospheric temperature of 60° at night and 70° by day with sun heat and ventilation are sufficient. If the atmosphere should become excessively dry, red spider may become troublesome, therefore means should be taken to prevent this. Any plants now in bearing should be watered occasionally with manure water, and the foliage should be syringed twice each day in favourable weather.

Lettuces.—If the stock of Lettuce plants for spring planting is insufficient to meet the requirements a sowing should be made at once, selecting a well-tried variety, such as Golden Queen. The seeds should be sown in a slightly heated pit, as near to the glass as possible; when the seedlings are well above the soil ventilation should be employed. In planting out this variety a distance of 9 inches should be allowed between the plants each way, and some protection should be given them against cold weather. Lettuces now in cold frames, and which are expected to turn in during January or February should have the decayed foliage removed from them. If slugs are troublesome, sprinkle a little hot lime around the edge of the bed. Admit air freely, and stir the soil between the plants occasionally.

Endive.—Plants in pots should be kept as free from damp as possible; they may be easily blanched by placing sheets of clean paper over the plants and a covering of dry fern over the paper to exclude light.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, DECEMBER 20—

Nat. Dahlia Soc. Annual Meeting, Carr's Restaurant, Strand.

SUNDAY, DECEMBER 25—

Christmas Day, Quarter Day.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich—38.6°.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, December 14 (6 P.M.): Max. 52°; Min. 49°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, December 15 (10 A.M.): Bar. 29.2; Temp. 53°; Weather—Dull.

PROVINCES.—Wednesday, December 14: Max. 50° Cambridge; Min. 44° Ireland N.

For Sales for the Ensuing Week see p. 460.

1912.

The issue of the first provisional schedule for the International Horticultural Exhibition, 1912, marks a step in organisation that the public will appreciate. After a somewhat prolonged period of uncertainty and doubt, for which it is impossible to exonerate completely those who were responsible for the initial proceedings, the schedule affords definite information upon the kind of exhibition that the promoters are hoping to realise, and it will help intending exhibitors to determine upon the classes in which they individually may enter. So far as the number is concerned there is no lack of choice, for the aggregate is 431 classes.

The Executive Committee has found it impossible as yet to apportion the prizes, but these details will be published in the next edition of the schedule. In view of the discussion which has taken place with respect to the desirability of excluding money prizes altogether, it may be pointed out that the Committee has adopted the following resolutions. That the system of prizes shall consist in a combination of silver (or silver-gilt) cups and money, together with a diploma; that there shall be a uniform type of cup made in a variety of sizes to suit the larger and smaller classes and merits, and that the cup shall, in all cases, be engraved with the seal or other official badge of the Exhibition Committee. These resolutions will commend themselves to most of our readers as affording means for providing appropriate rewards in all cases. There can be little doubt that the honour of winning a medal or cup at such an exhibition will be the greatest recompense amateurs can wish to obtain for the trouble they incur, but, in many cases, exhibitors who are not amateurs would be deterred from competing unless there were some prospect of winning money prizes to compensate them for the expense.

Division I. is devoted to 51 classes for stove plants and two for cut flowers. The largest miscellaneous groups in this division will be arranged on spaces of 400 square feet, and, in this case, stove and greenhouse plants in and out of flower may be intermixed. Smaller spaces of 200 and 100 feet are reserved for stove-flowering plants in flower, stove foliage plants, Caladiums, Hippeastrums, Gloxinias, Gesneras, Achimenes, and allied plants in flower; Nepenthes, Sarracenias and other insectivorous plants, Anthuriums and other species. There are also classes for

specimen stove and greenhouse plants of the species already named and others.

Division II. is devoted to Palms, Cycads and Agaves, and includes a class for groups of Palms arranged in spaces of 400 square feet. Orchids will be shown in the next division, which includes nearly 30 classes. The compilation of the Orchid section is to be commended, for the classes in some instances are framed to encourage exhibits possessing high demonstrative value, a system that might very well have been extended to the other sections. After provision is made for the usual groups of Orchids arranged on spaces of 500 square feet and 200 square feet for nurserymen and amateurs exhibiting separately, there are classes for groups of species and varieties of species, and again for Hybrids, also for White-flowered Cattleyas, Lælias, and Brassavolas, (but including those with coloured labellums). The latter classes will be arranged in groups not exceeding 100 square feet. Cypripediums are allotted spaces of 100 square feet and Dendrobiums 200 feet, whilst Lælias, Cattleyas, and Brassavolas will be shown in three classes. There are separate classes for Masdevallias, Miltonia vexillaria and its hybrids and varieties, Odontoglossum species and varieties, Odontoglossum hybrids, a class for Vanda, Aërides, Saccolabium, Phalænopsis, Renanthera, Angræcum and similar stove Orchids, and one for hardy terrestrial Orchids. The influence of the scarlet-flowered Cochlioda will be seen in a class set apart for hybrids in which this species was one of the parents.

Division IV. is devoted to Ferns and Selaginellas and Division V. to greenhouse plants; the provision for greenhouse plants being very comprehensive.

Roses can only be shown from indoor culture at such an early date of the season, but the annual displays we are accustomed to see at the Temple Shows afford sufficient evidence that our growers can make a glorious exhibition of pot Roses in May. These are provided for in Division VI., the largest class being one for a group of Roses arranged in a space not exceeding 500 square feet. Then follow Carnations and Pinks in Division VII. and hardy plants in Division VIII. The section for hardy plants is sufficiently comprehensive to illustrate the great measure of appreciation these flowers now enjoy, and the spaces allotted for the exhibits are liberal. There are four classes for rockeries planted with Alpine species, and it may be hoped that every effort will be made to render the rockeries as natural in their setting and in the species selected for planting as circumstances allow.

A few classes devoted to Tulips should have the effect of demonstrating to the public the peculiarities which distinguish the various types of the florist's Tulip, and the excellent garden qualities of the late-flowering and Darwin Tulips. There is a division for new plants of various kinds, in some cases for plants recently introduced into commerce, and in others, for species and varieties still undistributed. In addition to the specialized classes for new plants, exhibitors are invited to show novelties of any description, for which medals or certificates will be awarded at the discretion of the judges and committee.

The remaining classes are devoted to fruits and vegetables, for which valuable products

ample provision is made. If we may judge by the few fruits and vegetables usually contributed to the Temple Shows, cultivators are not particularly disposed towards showing them in May, but "1912" will be a special occasion, and we have every confidence that exhibitors will do their very best to surpass any efforts they have yet made. There are classes for 12 dishes and 9 dishes of fruit, and for a table arranged with 12 dishes of dessert fruit. Eight classes are devoted to Grapes, and even Muscat of Alexandria is enumerated amongst the varieties which are given a special class at this early show. In the principal competition for Grapes, as many as 12 bunches are required to be shown, including not more than 3 bunches of one variety.

A special section for fruit trees in pots or tubs will sure to be worthily represented. Specimens are always exhibited at the Temple Show, and Orchard-house cultivation has become of commoner practice during the past few years. Exhibitors of vegetables are called upon to contribute collections arranged in spaces not exceeding 100 square feet and 50 square feet, whilst an open class for a specified number of dishes is arranged for 25 dishes in not fewer than 12 kinds. Most of the smaller classes are for forced vegetables of various descriptions.

We do not find any information in the schedule as to the nature of the buildings that will be erected to accommodate the exhibits, but we hope it may be assumed that on this occasion, at least, we shall be spared the suffocating tents, and that the main buildings will not only be as large as the nature of the site permits, but that they will be provided with wooden sides and ends. If the main structures are sufficiently large an opportunity will be afforded for a landscape gardener to lay out the exhibition according to a general scheme and so produce effects which are as novel in this country as they are common at the best Continental shows.

It is satisfactory to know that an international jury will be constituted, and that this jury will be divided into sections, with a president and secretary for each section. The secretary for each section will be responsible for a report of the judging being handed into the Executive Committee—a custom which will enable the exhibition authorities to publish a list of awards at the earliest moment possible. The jury will meet at eight o'clock on the morning of May 22. We are glad to observe that endeavours will be made to obtain from the railway companies concessions whereby visitors to the Exhibition may travel at reduced fares.

This is as far as the present schedule informs us, except that in a paragraph inserted on the last page it is stated that it is desired to organise a horticultural education exhibition and to hold a conference. On several previous occasions, we have pointed out that these objects are certainly not less important than the exhibition itself, and we share the disappointment expressed by some of our correspondents that their importance was not sufficiently appreciated at an earlier stage. However, we have reason to know that a committee has at last been appointed to deal with the subjects, as we hope, in a thoroughly satisfactory manner, so that the records of the exhibition will be not less valuable than the report of the memorable congress of 1866.

THE VICTORIA MEDAL OF HONOUR.—We have received official information that the President and Council of the Royal Horticultural Society have decided to confer the Victoria Medal of Honour upon Messrs. THOMAS COOMBER, JOHN

proposed him for the R.H.S. Fruit Committee. Since that period, he has done great service for fruit culture, both in lecturing for the Nottinghamshire County Council and assisting with schedules. He prepared the little pamphlet *Fruit for Cottagers*, and was identified with other R.H.S. work, serving for some years on the Council of the R.H.S., and as a vice-president of the Fruit Committee until the extension and development of his business, on its removal to Lowdham, prevented his attendance.

Mr. JOHN JAMES CYPHER.—Mr. JOHN CYPHER, who is 56 years of age, was trained in horticulture at the Cheltenham Nurseries by his uncle, the late JAMES CYPHER, who built up for the establishment a world-wide reputation. Mr. JOHN CYPHER took a prominent part in the business for many years before his uncle died nine years ago, and since that time he has taken the lead in the management of the firm of J. CYPHER & SONS in conjunction with Mr. FRANK CYPHER. Specimen show plants were always a speciality of the firm, and they have gained numerous gold medals and cups at most of the leading exhibitions. Their success has depended very largely on the fine culture of their plants, and especially the Orchids, but beyond that Mr. JOHN CYPHER

series. Beyond this, he has rendered service to horticulture, having been a member of the Floral Committee for over 20 years, chairman of the Narcissus Committee eight years, and member of the Council 10 years. Mr. MAY has laboured



MR. ALFRED H. PEARSON, V.M.H.

JAMES CYPHER, C. R. FIELDER, A. H. PEARSON, and HENRY B. MAY. The Victoria Medal, it will be remembered, was instituted in 1897, on the occasion of Queen Victoria's Diamond Jubilee to commemorate that occasion by the award of Medals to distinguished horticulturists and others associated with horticulture. The number originally was 60, but on the death of Queen Victoria the number was increased to 63. The present elections are to fill the places of five Victoria Medallists who have passed away during the year.

ALFRED HETLEY PEARSON, J.P.—Mr. A. H. PEARSON is a worthy son of a worthy father, and



MR. HENRY B. MAY, V.M.H.

has the reputation of being one of the most skilled men in the artistic arrangement of plant groups. The magnificent group staged by him at Gloucester last year was one of his best efforts. Orchids have gradually displaced many other subjects at Cheltenham, and as a hybridist Mr. CYPHER has done good work, especially with *Dendrobiums*, which are cultivated up to the best. Mr. JOHN CYPHER has extended and improved the Cheltenham nurseries, and is a member of the Orchid Committee of the Royal Horticultural Society, and the Committee of the Manchester and North of England Orchid Society.

Mr. HENRY B. MAY.—Mr. MAY, who has for many years occupied a prominent position in the horticultural trade as proprietor of extensive nurseries at Edmonton and Chingford, has won a very large number of gold and other medals for his exhibits of Ferns, foliage and flowering plants at the Society's shows, and certificates and awards for new and beautiful novelties. Many of the most beautiful plants, now the common property of gardeners, such as, amongst others, the finest developments of the crested and plumose *Nephrolepis*, *Crotons*, *Dracenas*, and other foliage plants, have originated in his nur-



MR. C. R. FIELDER, V.M.H.

assiduously for the charities. He joined the committee of the Royal Gardeners' Orphan Fund 20 years ago, and on the retirement of Mr. WILLIAM MARSHALL, V.M.H., some 11 years ago, he was elected chairman of that body. During these 11 years the fund has continued to grow in usefulness and strength, enjoying as it does the full confidence of the public. The chairman sets an excellent example to the younger men, for he has never been known to be late at the committee meetings. Such a record of public service is well deserving of recognition.

Mr. C. R. FIELDER.—Mr. FIELDER is another practical gardener of rare abilities, who, on



MR. JOHN J. CYPHER, V.M.H.

the best traditions of the former Chilwell Nurseries are maintained by him. After working steadily and gaining experience at Chilwell, he first came into notice as a fruit expert at the Chiswick Conference in 1883, where he attracted the attention of a co-expert, Mr. GEO. BUNYARD, who



MR. THOMAS COOMBER, V.M.H.

several occasions, has contributed a weekly Calendar to these pages, Mr. FIELDER's subject being "Plants Under Glass." He commenced his gardening career at Hampton Court Palace in 1875. In 1888 he was appointed gardener and steward to the late Sir EDWARD NEWDIGATE,

Asbury Priory, Warwickshire. Four years later, in 1892, he was appointed gardener to the late Dowager Lady HOWARD DE WALDEN at West Malvern, and completed the laying out of the gardens at that place. On Lady HOWARD DE WALDEN's death in 1899, Mr. FIELDER was engaged by his present employer, Mrs. BURNS, at North Mymms Park, Hatfield, and in this place, just as at West Malvern, he was called upon to continue and complete the remodelling and extending of the gardens. Mr. FIELDER has been a member of the Royal Horticultural Society's Floral Committee since 1898 and an examiner in the R.H.S. examination for public park employes since its institution. He is a member of the committee of the Gardeners' Royal Benevolent Institution and of the Executive and Schedule Committee of the International Horticultural Exhibition, 1912.

MR. THOMAS COOMBER.—The distinguished gardener at The Hendre, Monmouth, is well known to our readers, not alone for his marvellous Pine-apples exhibited at the Royal Horticultural Society's meetings, but also for his contributions to the Calendar which appeared week by week in these pages during 1908. Mr. COOMBER was born in East Grinstead, of Kentish parents. He commenced his gardening career at Crimmonogate, Aberdeenshire, and later served for varying periods at Knole Park, Sevenoaks (at that time the seat of the late Earl DE LA WARR), Woburn Abbey, Bedfordshire, and Pencarrow, Cornwall, where he filled the position of foreman. On leaving Pencarrow, he was recommended by Messrs. JAS. VEITCH & SONS as general foreman at Rendlesham Hall, Woodbridge, Suffolk. Mr. COOMBER was next employed by Messrs. VEITCH, and later he was recommended by the late Mr. ARTHUR VEITCH as head gardener to Lord LLANGATTOCK. Mr. COOMBER has occupied his present situation for 36 years, and during that long period he has greatly improved the gardens. They are amongst the finest in the West of England, and are most celebrated for fruit cultivation, The Hendre being one of the very few establishments where Pineapple culture is still practised. At the Royal Horticultural Society's meeting on November 22, Mr. COOMBER exhibited a magnificent fruit of the Queen variety weighing 9 lbs.

PETER BARR MEMORIAL FUND.—Bearing in mind the considerable sum of money that would have to be invested for the purpose of providing a gold Peter Barr Memorial Medal annually, to be awarded in connection with work among Daffodils, the Executive Committee of the above fund recently resolved to obtain a Peter Barr Memorial Cup, to take the place of the proposed medal, and to be held for one year by the person honoured. This will still carry out the principle of the original idea, it will prevent the necessity of forming a Memorial Trust, and will permit of a larger sum being handed over to the Royal Gardeners' Orphan Fund. The Barr Memorial Fund will not be closed just yet, therefore any who have not yet done so are invited to send subscriptions to the treasurer, Mr. H. B. MAY, V.M.H., Chingford, Essex.

INTERNATIONAL EXHIBITION.—Copies of the first provisional schedule for the 1912 exhibition can be obtained gratis from the hon. secretary, Mr. EDWARD WHITE, 7, Victoria Street, Westminster, London.

CHRYSANTHEMUM SHOREHAM PINK.—At the meeting of the Floral Committee of the National Chrysanthemum Society held on December 5, it was decided that the single Chrysanthemum which received a First-class Certificate on November 21 under the name of "Pink Delight" should be known as "Shoreham Pink."

SCHOOL GARDENING IN SURREY.—The Continuation School Gardens held in connection with the Egham Technical Institute have received favourable comment from the County Inspector. The gardens had been discontinued for two years, and the instructor Mr. RECORD, and his pupils were somewhat handicapped in having to restore the gardens to working order. The average merit marks obtained were 160, which is 34 marks above the average for the county. Each of the 12 pupils obtain a "Distinguished Worker's Certificate."

TRAPPING BIRDS.—We have received a letter from Lord LINDLEY on the subject of Mr. THOMAS ANDREW KNIGHT's method of trapping birds, which was illustrated in the first volume of the *Gardeners' Chronicle* (1841). Lord LINDLEY says that "among the old wood blocks published in the *Gardeners' Chronicle* was a very simple and good trap for catching small birds without injuring them. Now that there is an effort all over this part of the country, and I suppose, other parts also, to destroy sparrows, a reproduction of the cut, with the description accompanying it, would, I think, be useful." The illustration reproduced in fig. 198 represents the trap in the act of springing up. It consists

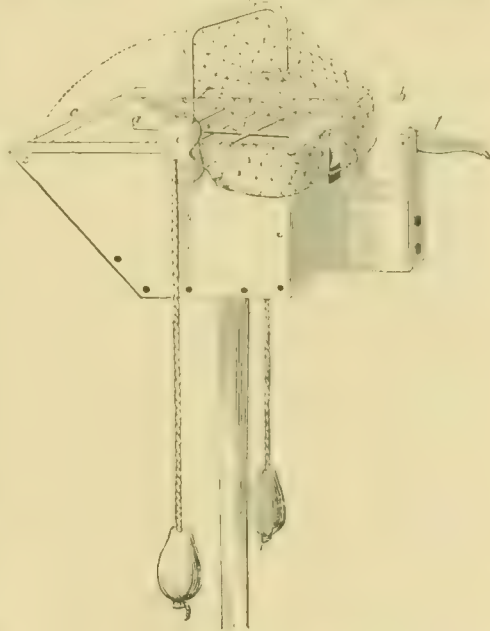


FIG. 198.—BIRD TRAP INVENTED BY THOMAS ANDREW KNIGHT.

of a wooden box, open on the upper side, and placed on a staff about 3 feet high. A strong wire is carried across it from e, and is so contrived as to move freely from b to c. To one side of this wire is attached a net, which is secured on the other side to the back of the box. Connected with the ends of the wire is a piece of line, to which weights are attached (brickbats or stones do very well). The purpose which they serve is to pull the wire forward to the front of the trap, the moment it is sprung, and so to enclose the bird in the net. When set, the wire is drawn back to the space between b and d; the catch (d) is turned over the edge of the wire and applied to a notch in a movable block at b; the block communicates with the trigger (a), on which the bait is placed, the pressure upwards of the wire upon the catch, in consequence of the weight of the stones attached to it, keeps it firmly applied to the notch (b), until the trigger is disturbed; but the moment a bird touches the point (a), the apparatus is disarranged, b and d separate, and the wire is instantly brought over to c in the direction of the dotted line, thus taking the bird prisoner.

A PROFESSORSHIP OF PLANT-PHYSIOLOGY. Dr. FRIEDRICH CZAPEK has been invited to accept the professorship of plant physiology, which has been established in the Imperial College of Science and Technology. The foundation of this chair marks, in a practical manner, the recognition of the fact that it is no longer possible for any one individual to deal effectively, in respect of teaching and research, with the whole of the vast subject of botany. Deplore it as we may, specialisation is a necessity, and the man of science who refuses to identify himself with a definite branch of a particular science runs grave risk of failing to obtain recognition of his work. Fortunately, although Dr. CZAPEK is a distinguished physiologist, he is one of the most versatile of men. Thus, after having made notable contributions to our knowledge of plant sensitivity, and finding himself incapacitated for a time from research in the laboratory, he devoted himself to writing an exhaustive work on plant-chemistry, and succeeded, during the intervals between his special researches, in producing a work which is already a classic. All who know Dr. CZAPEK's pre-eminence will welcome him to this country and will look forward with confidence to his conferring on the Imperial College no less distinction than that which, in the past, he has brought to the University of Prague, of which he is a member.

BEES AND "COLOUR-CHOICE."—Attention was drawn in our issue for April 30, 1910 (p. 281), to the conclusion reached by Professor Plateau that bees are guided to flowers by their sense of smell rather than by vision. The most recent experiments, however, appear to vindicate the older idea that bees possess a colour-sense, and that they use it in their quest for nectar and pollen. Thus Mr. J. H. LOVELL, experimenting with different coloured glasses smeared with honey, reaches the conclusion (*The American Naturalist*, November, 1910) that bees easily distinguish between different colours; that they visit a coloured glass in preference to an uncoloured one; that they form colour-habits readily, and having become habituated to a certain colour they return to it rather than to another; but that their obedience to habit is not absolute, for they forsake one colour for another which offers superior attractions in the direction of food. In short, it would appear that bees behave in an extremely sensible manner in looking after their own interests.

NATURAL HYBRIDS.—Mr. F. HAMILTON DAVEY records in a note published in the *Journal of Botany* (December, 1910), the rediscovery, after a period of 50 years, of a natural hybrid between *Erica vagans* and *E. cinerea*. The hybrid, found in the neighbourhood of the Lizard, looks like a plant of *E. vagans* bearing flowers of *E. cinerea*. In the same journal is an account by Mr. S. R. PRICE of the occurrence, near Wellington, Somerset, of the not uncommon pink hybrid *Campion*, a natural hybrid between *Lychnis alba* and *L. dioica*. The cross-breeds were present in a series of forms and occupied positions between the two parent forms. Some of the hybrids had pale pink, others deeper pink, and others, again, pink-flushed corollas, and thus showed a series of colour-forms similar to those which have been produced artificially by crossing white *L. alba* with red *L. dioica*.

FORCING HYDRANGEAS.—The "warm-bath" method of forcing (see *Gard. Chron.*, December 4, 1909, p. 378) has been applied with success by Mr. OSKAR SCHWERT-SCHLANGER, of Nizza, (South of France), to "Hortensias," which by treating in this way may be caused to flower in February. The

process employed (Möller's *Deutsche Gärtner-Zeitung*, No. 47, November 26) succeeds best with well-matured plants, but may be used also on plants which have not finished their growth. The specimens to be forced are immersed in water at a temperature of 57° to 61° F. for 18 to 20 hours. They are then brought into a house of a temperature of 68° F., and all shading is avoided. After three weeks the buds begin to burst. To stimulate leaf formation occasional waterings with Chili saltpetre (a teaspoonful to 2½ gallons of water) are given. When the inflorescences are showing the plants are hardened off in a cool-house and placed as near the glass as possible. The question remains whether we have in England enough winter sun to make the process a success.

RAINFALL IN CORNWALL.—Mr. FRANK J. CLARK, Tehidy Park Gardens, Camborne, Cornwall, states that the rainfall at Camborne during November amounted to 6.59 inches; in October, the fall was 7.78 inches, and during the first 11 days of December, the amount was 5.73 inches, making a total rainfall since October 1, of 20.10 inches. Our correspondent, who has only removed to Cornwall during the present year, states that the neighbourhood is very much more rainy than any in his experience, but older inhabitants inform him that such a wet period as the past few weeks is very rare, even in Cornwall.

PUBLICATIONS RECEIVED.—*Board of Agriculture and Fisheries*: Leaflet No. 231, Cheese-making for Small Holders; Leaflet No. 232, "Corky Scab" of Potatoes; Leaflet No. 236, Thatching; Leaflet No. 239, The Pear Leaf Blister Mite; Leaflet No. 244, The Destruction of Rats. (London: Board of Agriculture and Fisheries, 4, Whitehall Place.) Free on application to Board of Agriculture and Fisheries.—*The Estate Magazine*. December, (London: Spottiswoode & Co.) Price 6d.—*Transactions of the Edinburgh Field Naturalists and Microscopical Society*. (Edinburgh: William Blackwood & Sons.) Price 4s.

LABURNUM CARAMANICUM.

THE two best-known species of *Laburnum* are the common species, *L. vulgare* and the Scotch *Laburnum*, *L. alpinum*. Both of these species are very distinct from the subject of this note, which flowers in autumn. It is found growing wild in Asia Minor and Southern Greece. In habit *L. caramanicum* is more like a *Cytisus* or a *Genista* than a *Laburnum*, as it forms a loose-habited specimen, 4 feet to 6 feet in height. It is no doubt largely for this reason that the plant is known better on the Continent by the name of *Cytisus caramanicum*.

The trifoliate leaves are small and dull green in colour. Undoubtedly the most important feature is the flowering season, August and September. The yellow blossoms are borne in large, loose panicles at the ends of the shoots. Flowering rather late in the season, the seed-pods, to reach maturity, must in most seasons be protected at night. Its cultivation presents no difficulties, the plants thriving in loamy soil, either of a sandy, or moderately-heavy nature. Although introduced to our gardens, according to Nicholson's *Dictionary of Gardening*, nearly 30 years ago, *L. caramanicum* is by no means a common plant, nor easy to obtain from nurseries. A. O.

THE BULB GARDEN.

CHIONOSCILLA.

SOME 13 years ago I was much interested by reading in the *Gardeners' Chronicle* of the existence of hybrids between *Scilla* and *Chionodoxa*, and by an illustration of one of these (*Chionoscilla Allenii*) in the issue for March 20, 1897, fig. 57. This was received with *Chionodoxas* sent from Smyrna by Mr. Edward Whittall, to the Royal Gardens, Kew, and it appeared, from a note by the late George Nicholson, that similar hybrids had been raised by Mr. James Allen, of

Shepton Mallet. This led to my communicating with the latter gentleman, and to the acquisition, from time to time, of several of the *Chionoscillas* raised in his garden by natural or artificial hybridisation. The one now illustrated, Mr. Allen called "The Queen," but there appears to be no record of its parentage, although it is probably derived from *Scilla bifolia rubra* and *Chionodoxa Lucilæ*. It is one of the most distinct and one of the prettiest of these interesting hybrids, the flowers being large, borne on good racemes, and of a delicate pink colour on first

ALPINE VALLEYS.

BRIGA.

ALMOST exactly opposite the Miniera Valley, the valley of Briga diverges from the bed of the Roja at right angles. It is said, by Ball's indispensable Alpine guide, to "abound in rare species": a fact which adds to my annoyance in having nothing to chronicle from there except *Saxifraga cochlearis*. Nothing more than this did a long and broiling day of search disclose; but this, indeed, occurs in such abundance as to make it



FIG. 199.—LABURNUM CARAMANICUM.

opening, but passing to white. This plant is free-flowering, and superior to either of the supposed parents.

It will no doubt be distributed, but it increases very slowly by off-sets. The *Chionoscillas*, probably, occur more frequently than is understood, and several have been brought under my notice; but "The Queen" is the only one of its colour I have seen. It may be added that seedlings vary greatly, some being true *Scillas*, others *Chionodoxas*, and a few only *Chionoscillas*. S. Arnott.

proper to speak of the *Saxifrage* in connection with the Briga Valley rather than with any other of the slopes and gullies in the district of the Col de Tenda, where it may be seen. The plant especially abounds in the little glen of Rio Secco at the back of Briga village, where every boulder, whether in sun or shade, and every rock-wall is hung with tufts and masses of it. *Saxifraga cochlearis* is the smallest of the three great Silver *Saxifrages*, and, from the gardener's point of view, holds an intermediate position between *S. lantoscana* and the smaller species, *valdensis* and

diapensioides. Unlike *lantoscana* and *lingulata*, *S. cochlearis* varies almost infinitely in size of leaf and rosette. Like them, though, it is peculiar to the mountain limestone, and, like them, proves rather more floriferous in the garden than it appears to be in nature. In cultivation, *S. cochlearis* shares with *S. valdensis* the quality, so valuable to Southern gardens, of tolerating gladly and gratefully any amount of torrid sunshine. It is even on the hottest cliffs round Briga that the plant seems most to luxuriate, contrasting strangely with the shade-haunting propensities of *lantoscana*. When I saw it, the flower had passed completely over, and I was only able to collect varietal forms of foliage (though I did not succeed in coming across that minute leaved variety which, in so many English nurseries, passes under the name of *S. valdensis*), though these foliage-forms will probably yield as many forms of flower. For, even in blossom, *S. cochlearis* is more variable than either *lingulata* or *lantoscana*, some forms being thin and poor and starry, the others round and solid and pure.

Nevertheless, I persevered along the sunny face, and turned a corner into a more shaded gully. Here the slope became arduous and even faintly perilous, up over shelves of limestone that were very rotten and had an awkward angle. Suddenly I was heartened in my climb, for I looked up, and there, very high and unapproachable on a sun-baked crag, were three or four huge and towed tufts of what could only be *Saxifraga lingulata*. These, indeed, were unattainable; but where one plant is, there seedlings must have fallen. And, sure enough, upon my slope young plants of *lingulata* began to occur, and with them odd pieces of that easterly form of *lantoscana*, which Burnat calls *Bellardii*. However, in this gully, still unsunned at mid-day, the plants were small and of no great note; clearly it was not the centre of *lingulata*'s distribution, and the great tufts were isolated occurrences on that hot cliff.

Lingulata, however, was wiped from my thoughts in another minute by my discovery of a *Saxifraga* that during very many years I have searched for in vain, and in places entirely un-

I did not, in my search, even come on the *cochlearis* form from which his confusion clearly arose. I was surprised, however, to find a plant or two of *Aizoon*; until, far down on the other side of a stream, I saw dark primary rocks, and realised that *Aizoon* must have seeded across from its chosen home on to these limestone banks. But it will always be a puzzle to me why it is that *Saxifraga Aizoon*, in our gardens the most indestructible of its race, and no less vigorous on limestone than on any other rock, should, in nature, appear to have so marked a preference for the primary formations.

At the top of the steep slope there was a little rocky saddle between two looming peaks; just at the foot of this I came upon *Iberis Garreana* and *Asperula hexaphylla*—the latter peculiar to these crags—and just above, in the solid rock, one impregnable piece of *Phyteuma Balbisii*, a characteristic and very rare rock plant, which, in the Maritime Alps, represents *Phyteuma comosum*. I then slung myself across the rocky neck, and came upon a stony slope in full sunshine; and there, all down among the rubble and among the grass, *Saxifraga lingulata* was growing in vast and splendid tussocks, with a luxuriance and abundance I have never seen equalled. *Diapensioides* still occurred in the cliffs, but as clearly left *lingulata* supreme on this side of the range, as it had vindicated its own supremacy on the other. I have already described *Saxifraga lingulata*; when all is said and done it promises to be the greatest of its race, even eclipsing *lantoscana*, if that be possible. It is little short of a scandal that we should have had to wait so long for the introduction of a plant so splendid and so distinct. It was, of course, the unpardonable confusion among botanists between *lingulata* and *lantoscana* that prevented us from realising this superb species. So long as *lantoscana*, in all its forms, passed as the substitute of an almost mythical *lingulata*, so long was recognition denied to the genuine species with which *lantoscana* has, to all intents and purposes, nothing in common.

Saxifraga lingulata seems to thrive equally well whether in sun or shade, so long as it has limestone rock; its habit is inimitably robust and vigorous, and it is far more floriferous in a wild state than any other of its kindred. On the other side of the Col de Tenda I have seen it in rocky gorges, making tangled sheets of foliage 2 feet across, with the remains of half-a-dozen sweeping flower-spikes, which, in their time, must be a glory. It climbs upon the hills, too, higher, for instance, than *cochlearis*, which prefers the low hot valleys. If you cross the pass that leads from Limone over to the Certosa di Pesio, on the northern side of the range, after you have traversed the Col de Tenda, you will find on the rocks along the summit *Saxifraga lingulata* occurring with *Bellardii*, *diapensioides*, *cæsia* and *Aizoon*. And there is this much to be said for the old confusion, that *lingulata*, *Bellardii* and *lantoscana* may well all have had a common origin. Though you never find short, blunt-leaved forms of *lingulata*, you do occasionally come across long-leaved forms of *lantoscana*, even though these never, at their wildest, could really be confused with the wiry narrowness of *lingulata*. At the same time, their likeness is both obvious and strong; and young seedlings are absolutely indistinguishable. The question of hybrids is interesting, and needs exhaustive examination. I certainly possess, from St. Martin, plants of true *lantoscana*, whose rosettes have more regularity than the type, and whose flowers, on stocky spikes, are small and of a dull colour. This tone and the rosette make me suspect the influence of *Aizoon*, and on the Pesio Pass I came on another ugly form with the same uninteresting flower, whose rosette seemed to me to be modified *lingulata* rather than *lantoscana* or *Bellardii*. Yet, of course, *Aizoon* is only coming into bloom when the others are passing over; but that stodgy yellowness of colouring is never proper to the big silver *Saxifragas*, but is



FIG. 200.—CHIONOSCILLA "THE QUEEN": FLOWERS PINK, LATER BECOMING WHITE.

Nothing further did the Briga Valley yield; for better rarities we must advance up the Roja Valley, to where the town of Tenda lies on a slope at the foot of three gigantic crags of naked limestone. Not, probably, to be recommended as a place to sojourn, Tenda is perhaps the most picturesque town in the Maritime Alps; it is girt in by hills on which you may find *Iberis Garreana*, *Asperula hexaphylla*, *Phyteuma Balbisii*, *Moeringia papulosa*, and no fewer than five of the silver *Saxifragas*—*Aizoon*, *cochlearis*, *Bellardii*, *diapensioides* and *lingulata*. And on the citadel that dominates the town still stands the wreck of the castle in which, by some accounts, the last sovereign Lady of the Alps, Beatrice Lascaris, Countess of Tenda and Duchess of Milan, was strangled by order of the Duke, her husband.

Up the foot of one blazing cliff I crawled, over torrid slopes aglow with *Tunica*, *Linum salsoloides* and *Lavender*. When I reached the rocks, however, nothing did I see but the *Saxifraga potentilla*, of which, by that time, I was heartily weary.

suited to its habits. Of all its section, *Saxifraga diapensioides* is the smallest, hardest, neatest, most compact, and charming. It is also reckoned difficult to grow; largely, I think, because many people have, like me, been misled as to the condition it loves. I, for my part at least, had always thought of it as a species of sunny cliffs. Yet here, in this shady corner, it was growing and seeding abundantly in the crevices of very rotten rock, exactly like the scar-limestone under Ingleborough. Even among the grass and moss on the ledges it thrived, and young plants were everywhere coming on to take the place of the old ones, which do not seem, as a rule, to develop a span of more than 6 inches. The flower was over, of course, nor do I think that *diapensioides* ever varies, although in artificial conditions—pressed under a stone, for instance—its leaves occasionally elongate until the plant comes to look like a very tiny *valdensis*. These crags, by the way, are those from which Maw mistakenly quotes the rare granite-loving *valdensis* itself.

restricted to *Aizoon*, *crustata* and *longifolia*, with their derivatives.

The Col de Pesio gave me also two pictures, which those who have not been there may care to see. The one, a long, steep slope of grass, aglow with a hundred thousand flowers of *Dianthus neglectus* in every shade of gorgeousness; and, on the other side of that same saddle, looking down an incline as steep as a house, one carpet of *Arnica montana* in full bloom, and amid its golden suns stood up in dense ranks the long purple spikes of *Gymnadenia odoratissima*. A glorious harmony exactly like one of Mr. Flemwell's pictures. From the top of the pass, too, one has wonderful views; ours was a day of broken clouds and tenderest colours; the whole range lay stretched before us—from *Enchastraye* and *Argentera* in the furthest distance to the terrible *Rocca del Abisso*, towering over the Col de Tenda. On the near side of the pass the Maritime Alps merge into the Ligurian Apennines, fading away towards the Gulf of Genoa. The last of the Alps towers over the Pesio Pass, the gaunt, inhospitable white crags of *Marguareis*, where, they say, *Ranunculus alpestris* resumes its sway. For the high Alpine Buttercups are very rare in this region. *Glacialis* occurs (only) between *Enchastraye* and *Argentera*; *alpestris* is not found at all until you get on to the pure limestone of *Marguareis* and *Montgioie*; and here it is that *R. aconitifolius* hybridises with *R. pyrenæus* and gives *Ranunculus lacerus*, which, however, I was not lucky enough to see. *Reginald Farrer*.

LATE-ROOTED CHRYSANTHEMUMS.

At the recent Chrysanthemum Conference (see p. 437), a paper entitled "Late-Struck Japanese Chrysanthemums for Exhibition" was read by Mr. Thos. Stevenson, Woburn Place Gardens, Addlestone. The following extracts are taken from Mr. Stevenson's remarks:—

During the few years that I have been exhibiting I have cut a greater percentage of first-rate exhibition flowers from plants rooted in March and April than from those rooted early and grown on in large 16's or 12-inch pots.

To obtain good blooms the plants must be kept growing freely from the time of striking the cuttings, never allowing them to receive a check or become pot-bound in the intermediate stages of growth, and always aiming to have them in their flowering pots as early as possible. This is one of the main points to be observed, and another important detail is the watering. From the outset the plants will take more water in proportion than will those rooted earlier without it in any way tending to make them sappy or gouty. I also find that taking the buds may be delayed from seven to ten days after the older plants, as they open or develop their blooms rather more quickly, and it is astonishing with what accuracy the buds can be timed on these single-stemmed plants.

Some of the varieties may be grown straight away, the natural break occurring at just the right time to take the resulting first crown bud, whilst others will require stopping (in most instances some time during June) to ensure the buds being secured about the right time. If the plants are growing freely, as they should be during June or early in July, the stopping will not check them greatly as they will break into fresh growth within a few days. I have practised stopping the plants twice, once immediately after they have become established in 60-sized pots, and again as may be necessary for the timing of the buds; this double stopping keeps the plants very dwarf, but it is at the expense of the flower. The first stopping tends to check root action, and the plants never recover the lost ground.

In the past season I purposely stopped some of the strongest plants of several varieties in March for comparison, and though the weaker plants of the same varieties were stopped in June for the purpose of timing the buds, they grew

faster than those stopped early in every instance, and produced much finer flowers.

Another point is this: these late-struck plants, if kept in fairly small pots, say, large 32's and 24's, may be given more manure than the others right up to the time the florets begin to expand, without any signs of damping showing in the petals, and this late feeding ensures the flowers opening quickly and finishing well, without any indication of staleness. Late-struck plants have several advantages. First, their short season of growth, as compared with those struck in December, and the small amount of frame room required till the middle or end of April. Secondly, the greater accuracy of timing the buds and the subsequent easy opening of the same; and thirdly, their dwarfness.

So far I have dealt with the cultivation of the plants up to the time of potting them into their flowering pots. As soon as the roots begin to grow in the new soil the plants should be placed out-of-doors for the summer in rows a yard apart and about 18 inches apart in the rows.

The tying of the shoots and the removal of the side growths must be regularly attended to; watering is an important matter, for the soil must on no account be allowed to become dry. Syringing should be done both morning and afternoon on all fine days, though not after 4 p.m. During dull weather syringing should be suspended and towards the end of the season it should be gradually lessened.

I prefer to commence feeding as soon as the plants are in good growth and the pots fairly full of roots, affording them a little liquid manure. I employ very little manure in the potting soil beyond bonemeal, but before the plants show signs of exhaustion. I give them a little artificial manure, and continue to apply this every week or ten days until the flowers are expanding freely. Two or three times during the growing season I apply a light top dressing of soil, which is watered in with a rose, and not pressed down.

I strongly advise early housing, as I am sure the flowers will not be any earlier in opening. Admit all the fresh air possible during fine weather, but as soon as the flowers begin to open a little fire heat must be given to keep the atmosphere inside the house dry and circulating. During very wet or foggy weather it is wise to stretch tiffany over the ventilators, but under no circumstances close the top ventilators. Though no hard and fast rule can be laid down as to the temperature of the Chrysanthemum house, it should not be lower even on cold nights than 48°.

There are a few varieties, such as *Edith Jameson* and its sports, that require pinching in April, i.e., as soon as they are established in 60's. There are also a few varieties, such as *Madame Paolo Radaelli*, *Hcn. Mrs. Lopes*, *Mrs. D. Thornton*, and *Captain Mitford*, that require stopping during the early part of May to procure really good exhibition flowers; beyond these there are very few, but what may be left until after they are in their flowering pots before being stopped.

Bessie Godfrey, Frank Payne, Chrysanthemiste Montigny, Madame G. Rivol, Mrs. W. Iggulden, W. Gee, Mrs. C. Penford, Duchess of Sutherland, and Master David are among the varieties that should be stopped during the first ten days of June, whilst most of the other popular varieties, such as *F. S. Vallis*, *Reginald Vallis*, *James Lock*, *Sir Frank* and *Lady Crisp*, *Mrs. G. Mileham*, *Lady Talbot*, *Valerie Greenham*, *Master James*, *Superbe*, *Walter Jinks*, *Miss A. Nichols*, *Algeron Davis*, *Rose Pockett*, *Purity*, *W. Mease*, *Sir A. Rollitt*, *Harry Wood*, *Bessie G. Payne*, and *Francis Jolliffe* give the best flowers when stopped between the 10th and 20th of the month. There are a few sorts that may be stopped even later than this, such as *White Queen*, *J. H. Silsbury*, *Mrs. W. Knox*, *O. H. Broomhead*, *Miss H. Rowley*, *Maud Jefferies*, *Mrs. L. Thorne*, and *Splendour*.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

MONTBRETIAS.—In the *Gardeners' Chronicle* for December 10, p. 432, Sir Herbert Maxwell speaks of the effectiveness and floriferousness of the Montbretias as plants for woodland walks. As I also have had experience of Montbretias naturalised in the same part of the kingdom from which Sir Herbert Maxwell writes, I cannot say that they impressed me with their freedom of flowering or height of flower stems. The soil there was light in texture, overlying a substratum of sand and gravel, or in the local vernacular "till." Although there was no necessity to lift the corms as far as climate was concerned, I made it a practice in the garden to lift a few clumps in the late autumn and store them intact in a frost-proof shed until February or March, when the largest corms were planted in the positions they were intended to flower, putting them at distances of 6 inches apart each way, although the only varieties grown were *Pottsii* and *Etoile de Feu*, they were much superior in height of flower-stem and in size and brilliancy of colour to those left alone. Where cut flowers are in demand this annual division is to be recommended. In a narrow border on the north side of a low, retaining terrace wall in these gardens, where the soil is adhesive, Montbretias have succeeded well for three years. They have formed clumps of about 2 feet across; and in the late summer and early autumn of the present year they bore on an average two dozen tall flower-spikes. When I say that this border is over 70 yards long, and that each alternate group was composed of *Anemone japonica alba*, it will be imagined what a very pretty effect they produced. *F. Street, Verdley Gardens, Sussex.*

CHARLES ROSS APPLE.—No hasty judgment should be passed upon this Apple. Hitherto, its fruits have been produced on comparatively young trees, and these have yielded fruits of large size. When such is the case the influence of one of the parents namely *Peasgood's Nonesuch*, becomes too apparent. I think it will be found that, as the trees age they will become more productive, and if the fruits are smaller they will possess better flavour. It does seem as if the common characteristic of the famous *Blenheim Pippin* Apple, that of cropping sparsely in youth, but freely in old age, is likely to be repeated in *Charles Ross*. As to flavour, it may not be forgotten that at the R.H.S. Fruit Shows in 1907 and 1908, *Charles Ross* won in the class "for any other variety of dessert Apple for flavour." The fruits in both cases were not the largest shown, but they won the prize for flavour easily. It would be interesting if next year fruits could be presented for taste from the original seedling tree, which is presumably at Welford Park, now in the charge of Mr. W. Pope, for comparison with fruits obtained from a much younger tree. If large fruits reproduce the poor quality of *Peasgood's Nonesuch*, smaller and firmer fruits may reproduce the rich flavour and excellence of *Cox's Orange Pippin*, which, when the fruits are not too large or highly coloured, must still be regarded as the richest flavoured and best of all dessert Apples, even though its constitution is not all that could be desired. *A. D.*

CEDARS AT PEPPER HARROW PARK.—Having noticed in your issue for December 3 some notes by Mr. Wright on Cedars at Eastbury Manor, I was induced to measure the fine old specimens in the pleasure grounds here. There are 11 large trees of a great age, but, unfortunately, two look as if decay has set in and they may collapse shortly, as the bark has already begun to peel off, but all the others look healthy and vigorous, and may live for another generation. There are several young trees planted near to them to take their places, and these are about 20 years old. In years gone by when the snow-storms were more serious the trees of long standing were damaged considerably, many large branches being broken. I shall never forget the grand spectacle they presented on April 25, 1908, when we had a heavy downfall of snow. The trees were practically covered over, and the boughs were resting on the ground with their heavy burden. I was afraid we should lose

several large limbs then, but as the sun had already some power at that period we were very fortunate to escape losing a specimen. Sometimes a very heavy rainstorm will make them snap. There are several old trees in the park that have been more exposed to the wind, and so are not so presentable. The measurements are taken at a point 3 feet from the ground, with the exception of the largest and most peculiar specimen, which is exactly 29 feet, as near to that point as one could take the measurement. The others have more of a trunk and are not so spreading, but have a large circumference, viz., 23 feet, 22 feet 6 inches, 22 feet, 21 feet, 20 feet, 19 feet 9 inches, 19 feet, 17 feet (two specimens), 16 feet 6 inches. The soil is of a very light nature where the Cedars stand, but no doubt it suits the trees. I should be interested to hear if any of your readers know of any Cedar trees with larger trunks at 3 feet from the ground. We have several Beech trees here 19 feet in circumference. *E. J. Quinton, Peper Harrow Park Gardens, Surrey.*

ABUTILON THOMPSONII AND OTHER SPECIES (see p. 427).—Mr. N. E. Brown states that there is a plant cultivated at Kew under the name of *Abutilon Thompsonii* var. *flor. pleno*, and that the leaves are not variegated. It would be interesting to know the name of the *Abutilon* with much smaller leaves than the one known in gardens as *Thompsonii*, having mottled leaves and double flowers, the corolla being orange coloured with darker veining. I have known a variety of *Abutilon* with mottled yellow and green foliage under the name of *Darwinii tessellatum*, but I have not seen it in flower growing, besides others with variegated leaves. The *Abutilon* known to me as *Thompsonii* seems to correspond with the one sent to Mr. Brown from Bicton. It is strikingly attractive as a bedding plant. *F. Street, Verdley Gardens, Sussex.*

REV. J. H. PEMBERTON.

THE new President of the National Rose Society, whose portrait we have pleasure in reproducing, is well known wherever Roses are grown or exhibited. It was an excellent rule, made on the death of the first President, Dean Hole, that future presidents should hold office for two years only. The new rule has worked admirably, and each President that has passed the chair in the last eight years has left his mark in the history of the Society. Wherever Roses are grown and shown Mr. Pemberton's name is a household word. He tells us, in his book, *Roses, Their History, Development and Cultivation*, that, from his earliest childhood, he has been associated with the flower, and, in fact, was nurtured in an atmosphere of Roses. His love for the flower has never ceased growing, and, through all the changes that he has seen take place in the Rose world, he still has a place in his heart for the old Roses of long ago—"Grandmother's Roses," as he once labelled a collection of them that he staged at an exhibition. Mr. Pemberton started showing Roses in 1874; he was one of the exhibitors at the first show of the National Rose Society, held at the St. James's Hall, and has, we believe, never missed exhibiting at a metropolitan show of the Society. Of his triumphs in the exhibition tent, from the amateur championship downwards, most readers are aware, for he has won more prizes than any other amateur in the kingdom.

And yet he by no means confines his interest in the Rose to the exhibition flower, for no one takes a keener interest in the decorative or garden Rose, and its place in the Rose world to-day owes a great deal to the efforts of Mr. Pemberton. Only those who know him best realise how many are the phases of the subject in which he is interested. His book before referred to is probably the best all-round work on the Rose; whilst his articles to the horticultural Press bear the imprint of a master hand. He has travelled far and wide, lecturing on all phases of Rose culture. As one of the leading "counsellors" of the National Rose Society, he has been responsible for many

a reform and wise innovation. As a judge, he has few equals. Notwithstanding his love for the Roses of long ago, he has a knowledge of new Roses that few can equal. He also is interested in Rose hybridisation, and has raised more than one new variety. In paying him the compliment of electing him their President, the members of the National Rose Society recognised the sterling worth of the man and his love of the Rose. We feel sure that, under his presidency, the Rose Society will continue to prosper.

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

DECEMBER 6.—*Present*: E. A. Bowles, Esq., M.A., F.L.S., F.E.S. (in the Chair); and Messrs. W. C. Worsdell, A. Worsley, G. Gordon, J. T. Bennett-Poë, J. Fraser, J. Odell and F. J. Chittenden (hon. secretary).

Fruits of Eucalyptus and allied plants.—Mr. WORSDELL showed the fruits of *Eucalyptus ficifolia*, in which they are quite simple; *E. cornuta*, where they are partially united; *Syn-carpia*, where they are formed from five or six fused flowers; and *Agonis flexuosa*, where they are very densely aggregated. The fruits, which had been collected by Mr. WORSDELL in South



REV. J. H. PEMBERTON,

The new President of the National Rose Society.

Africa, showed in an interesting fashion the variation in fruits which may be seen in nearly allied plants.

Stachys ambigua.—Mr. J. FRASER showed specimens of this plant, a hybrid between *S. sylvatica* and *S. palustris*, and commented upon the characters wherein it differed from its parents.

Kale with surface outgrowths.—Mr. BOWLES showed a leaf of Scotch Kale from Mr. COWAN, of Penicuik, with outgrowths from its upper surface, somewhat like those often seen in Cabbage, and termed *ascidia*. In the present case, however, the growths were fringed at their edges and considerably crisped.

Tar-water and plants.—Mr. F. KITLEY, of Bath, sent two plants of *Coffea*, one of which had been watered with tar-water a few times, the other not. The former showed much more vigorous growth, the latter had apparently not been quite equal to the former at the start and had been stopped. While it is probable that tar-water would have some such effect as was shown, the Committee thought that the particular specimens were hardly comparable with one another.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

DECEMBER 1.—*Present*: Messrs. E. Ashworth, R. Ashworth, Thorp, Ward, Cowan, Keeling, Ashton, Holmes, Cypher, Sander, and Weathers (hon. sec.).

O. O. WRIGLEY, Esq., Bury (gr. Mr. Rogers), made a fine display with *Cypripediums*, the exhibit occupying about 100 square feet. The range of variety was large, many of the best known hybrids and choicer varieties being represented.

Z. A. WARD, Esq., Northenden (gr. Mr. Weatherby), staged a group of plants, principally *Odontoglossums* and *Cypripediums*. (Silver Medal.)

A. WARBURTON, Esq., Haslingden (gr. Mr. Dalgleish), exhibited a collection of *Odontoglossums*, some fine forms of *O. crispum* being prominent. The most notable specimen was a plant of *O. c. var. Inotiens*. (Silver-gilt Medal points in the "Robson" Cup were awarded.)

R. ASHWORTH, Esq., Newchurch (gr. Mr. Gilden), exhibited an interesting collection of Orchids, consisting mainly of *Odontoglossums*. Awards of Merit were made to the following:—*O. × Lambeauianum* var. *Triton*, *O. × L. var. Mars*, *O. × Bacchus*, *Calanthe × George*, and *Cypripedium × Victoria*. (A Cultural Certificate was awarded for the quality of the *Odontoglossums*.)

S. GRATRIX, Esq., Whalley Range (gr. Mr. Brown), received an Award of Merit for *Cypripedium × Beacon magnificum*, the parentage of which was not recorded.

REV. J. CROMBLEHOLME, Clayton-le-Moors (gr. Mr. Marshall), exhibited a distinct form of *Cypripedium × Lord Ossulston*.

W. R. LEE, Esq., Heywood (gr. Mr. Woodhouse), staged a superb group of plants. *Odontoglossum × Rouge Dragon*, *O. cirrhosum × O. × ardensissimum*, and *Cypripedium × Sunrise* received Awards of Merit.

R. LE DOUX, Esq., West Derby (gr. Mr. Fletcher), received Awards of Merit for *Cypripedium × R. Le Doux* and *Odontoglossum × eximium* var. *Mme. Augusta d'Abren*.

MESSRS. J. CYPHER & SONS, Cheltenham, staged a fine group of *Cypripediums*, for which they were awarded a Silver Medal.

F. A. HINDLEY, Esq., Gt. Horton, Bradford, was awarded a Bronze Medal for a small group of miscellaneous plants. Other exhibitors were Messrs. SHACKLETON, Bradford; E. V. Low, Vale Bridge; CHARLESWORTH & Co., Hayward's Heath; J. ROBSON, Altrincham; W. SHACKLETON, Bradford; STANLEY & Co., Southgate; J. H. CRAVEN, Keighley; and J. BIRCHENALL, Alderley Edge.

SCOTTISH HORTICULTURAL.

DECEMBER 6.—The monthly meeting was held in the Goold Hall, 5, St. Andrew's Square, Edinburgh, on this date. Mr. Whytock presided, and there was an attendance of 100 members.

A lecture entitled "The Scottish Horticultural Association: A Retrospect" was delivered by Mr. M. Todd, Edinburgh, an ex-president. Photographs of past presidents and other officials of the association were shown by means of lantern slides. The association, he said, had a small beginning, starting in 1877 with about 100 members and an income of about £30. At the meeting at which the association was formed, and which was held in the same building in which the monthly meetings are still held, the late Bailie Methven occupied the chair, and the late Mr. Dunn, of Dalkeith Gardens, was elected president, with the late Mr. Hugh Fraser as vice-president, Mr. John Methven as secretary, the late Mr. A. Milne as assistant secretary, and the late Mr. D. P. Laird as treasurer. The following gentlemen alone remain of the 15 councillors who were then elected:—Messrs. R. Lindsay (late of Royal Botanic Gardens, A. McKinnon (Scone Palace), D. W. Thomson, James Grieve, and Geo. McClure (now in the United States).

The Society's first Chrysanthemum Show was held in Dowell's Rooms in 1886; in the two following years it was held in the larger Music Hall; and in 1889 a great International Centenary Show was held in the Waverley Market, where the show has been held annually ever since. At this international show more than £1,200 was taken at the gates. The receipts for entrance to the Society's shows since then has amounted to over £20,000, of which sum £8,000

has been awarded in prizes, over £5,000 has been spent on music, and £1,000 given for charitable purposes. At the monthly meetings papers on horticultural subjects are read and discussed, and new and interesting plants exhibited. The annual excursions were started in 1895, and they prove popular with the members.

Mr. Massie was unanimously nominated for election as president in succession to Mr. Whytock, and Messrs. J. Phillips and W. G. Pirie were nominated as vice-presidents.

The annual meeting will be held on January 17, 1911.

It was decided to hold a three days' Chrysanthemum show in 1911, the dates being fixed for November 16, 17 and 18.

NATIONAL ROSE.

DECEMBER 8.—The 34th annual general meeting of the National Rose Society was held on this date, at the Westminster Palace Hotel. The Rev. F. Page-Roberts presided. The notice convening the meeting was read and the minutes confirmed, after which Messrs. B. Cant and Dr. Williams were appointed scrutineers of the ballot. The Rev. F. R. Burnside referred to the removal of vice-presidents, and urged his claim for reinstatement to the meeting.

The President called upon the secretary, Mr. Edward Mawley, to read the annual report, from which we extract the following paragraphs:—

EXTRACTS FROM THE REPORT.

For the first time in the history of the Society the number of new members has reached 1,000.

EXHIBITIONS.

The Metropolitan Exhibition was again held by the kind permission of the President and Council of the Royal Botanic Society in their Gardens in Regent's Park on July 8, and proved the largest but two the Society has yet held. The most noteworthy feature of the Show was the great interest taken in the new seedling Roses, for the exhibition of which a separate tent had been for the first time provided.

The provincial show was held at Salisbury on July 13. This was also a successful exhibition, for although it was not as extensive as many previous provincial shows, the average quality of the blooms was very good. The arrangements for the exhibition were admirably managed by the members of the local committee, under the able direction of the hon. secretary of the Wilts. Horticultural Society, Mr. L. J. Sly.

The autumn exhibition, the seventh of the series, again took place in the Royal Horticultural Hall, Vincent Square, Westminster. The average quality of the exhibition Roses was not quite as good as at some previous autumn shows, but there were several striking displays of decorative Roses, and the large representative groups have never before been better or more tastefully arranged.

RULES FOR JUDGING NEW ROSES.

Early in the year fresh rules for judging new seedling Roses and distinct sports were drawn up and appear to have given greater satisfaction than any previously framed.

THE INTERNATIONAL HORTICULTURAL EXHIBITION IN 1912.

The Council have not only promised a donation of £50 towards the prizes offered in the Rose section of that important exhibition, but at the request of the committee submitted a schedule of the Rose classes they considered most suitable considering the time of year when the show will be held.

THE PUBLICATIONS.

The 1910 edition of the *Enemies of the Rose* and the *Rose Annual for 1910* were distributed to the members in April, while the 1910 edition of the *Hints on Planting Roses* was sent them in September.

THE DEAN HOLE MEMORIAL MEDAL.

At the last annual general meeting the Dean Hole Memorial Medal was presented to the Rev. J. H. Pemberton, vice-president of the Society, for his services extending over more than 30 years, on behalf of the Rose and the National Rose Society.

The Council record with regret the death of Mr. John Cranston, one of the original founders of the Society. He was for many years a mem-

ber of the General Committee, and in the early days of the Society was the most frequent winner of the first prize in the leading class for nurserymen.

FINANCE.

The receipts from all sources during the past year, including a balance from the previous year of £436 10s. 6d., amounted to £3,404 14s. 4d., and the expenditure to £3,040 1s. 6d., leaving a balance at the bankers of £364 12s. 10d. after £250 had been placed to the Reserve Fund. The lower balance at the end of the year is due principally to two things, the smaller amount received in gate money at the Royal Botanic Show, owing to the previous unfavourable weather and other temporary causes, and to the unusual number of publications that had to be paid for during the year. The Reserve Fund now stands at £1,000.

MEMBERSHIP.

During the past 12 months 1,050 new members have joined the Society, or 150 more than in 1909. Allowing for the losses by death and resignation, the total number of members is now 4,584. Taking the year as a whole, nearly three new members a day have been, on an average, added to the list of membership.

INCREASE IN MEMBERSHIP SINCE 1905.

	1905.	1906.	1907.	1908.	1909.	1910.
Number of members	1,637	2,034	2,484	3,150	3,797	4,584
Net increase since previous year ...	329	397	450	666	647	787

ARRANGEMENTS FOR 1911.

The Metropolitan Exhibition will take place in the Royal Botanic Gardens, Regent's Park, on Friday, July 7. The provincial show will be held at Ulverston, in conjunction with the North Lonsdale Rose Society, on Wednesday, July 19.

Arrangements have been made with the Royal Horticultural Society to hold the autumn show in the Royal Horticultural Hall, Vincent Square, Westminster, on Thursday, September 14.

The balance-sheet showed a debit account of £3,404 14s. 4d., including balance at bankers, £427 8s. 8d.; subscriptions, £2,299 16s. 6d.; proceeds of shows, £320 6s. 6d.; affiliated societies, £76 13s. 6d.; advertisements in Society's journals, £120 14s. 4d.; and sale of Society's publications, £92 4s. 6d. The Reserve Fund invested in Consols was valued at £951 10s. 8d. The principal items of expenditure were publications, £725 10s. 9d.; printing, stationery and advertising, £197 3s. 9d.; postages, telegrams and sundry expenses, £244 7s. 3d.; honorarium to hon. secretary, £100; assistant secretary and assistant treasurer (£80 and £60), £140; expenses at shows, £469 16s. 6d.; prize monies, £689 12s.; purchase of plate, medals, &c., £153 2s. 9d.; and purchase of Consols Reserve Fund, £250; leaving a balance at the bankers amounting to £364 12s. 10d.

The financial statement was read and explained by the treasurer, Mr. G. W. Cook, who gave a very lucid statement of the various items of expenditure. Mr. Cook said the cost of the shows, after deducting the receipts incidental to the exhibitions, amounted to £961. The various publications of the Society entailed a net cost of £580. At the exhibitions, 575 prizes were offered in competition.

The President moved the adoption of the report and financial statement. He congratulated the members on the flourishing condition of the Society, and stated that it was still on the upward grade.

Mr. Molyneux seconded. He said that Mr. Cook was rightly proud of the position of the Society, for the work had been carried out in a most efficient manner. The Society had a reserve fund of almost £1,000; he thought the time would shortly arrive when the Finance Committee should consider some further specific method of expenditure with a view to encouraging the development of the Rose.

Mr. C. E. Shea, chairman of the Finance Committee, stated that, in his opinion, it was for the Council to consider the form of expenditure, and for the Finance Committee to advise as to the feasibility of the proposals. There were, at the present time, additional expenses ahead; the Royal Botanic Society, which had, in past years, given the use of its gardens for the metropolitan exhibition free of charge, were next year to receive the sum of £50; whilst a donation of £50

had been promised to the funds of the International Horticultural Exhibition, 1912.

Mr. Hammond considered that a reserve of £1,000 was not too much, and advised that it well becomes any society to be careful when prosperous.

It was unanimously resolved that the report and financial statement be adopted, printed, and circulated.

In proposing an honorarium of £100 to the secretary (Mr. Edward Mawley), Mr. G. W. Cook referred to the great services the secretary had rendered to the Society. The proposition was seconded by Mr. C. E. Shea, who referred to Mr. Mawley as being the mainspring of their success. The proposal was carried with acclamation, and the gift suitably acknowledged by Mr. Mawley.

The proposed alteration of Rule 10, which appeared on the agenda in the name of the Rev. J. H. Pemberton, was not proceeded with. Mr. Pemberton explained that it appeared owing to a misunderstanding on his part, and he moved: "That the matter be taken in hand during the coming year, in time to become operative at the next annual meeting." This was seconded by Mr. C. E. Shea and carried.

Mr. George Bunyard next moved, "That the thanks of the Society be given to the officers and other members of the Council for their services during the year." Mr. R. Pinches supported the vote of thanks, which was carried with acclamation, and suitably responded to by the secretary.

The result of the ballot was reported by the President, who announced that the house list had been carried, with the addition of the Rev. F. R. Burnside as vice-president.

A pleasing duty of the President was the presenting of the Dean Hole Medal to Mr. Edward Mawley. In making the presentation, the President said that no one had deserved this recognition more than "our incomparable secretary." He, personally, was astonished at the amount of work which Mr. Mawley did, and hoped he would long live to inspire others in the welfare of the Society.

Mr. Mawley, in reply, thanked the members heartily for presenting him with the medal, which is the most-coveted prize in the Rose world.

Mr. George Gordon moved a vote of thanks to the retiring President and Chairman. This was seconded by Mr. H. R. Darlington, and carried with enthusiasm.

The Rev. F. Page Roberts, in reply, said that, though the time had come to say farewell as president, yet it was not a sad farewell, for it had proved a most pleasant term of office. He now desired to introduce the President-elect, who, he was sure, needed no introduction, and he therefore vacated the chair.

The Rev. J. H. Pemberton thanked the members for electing him to the position of President, and stated that he would do his best to merit the confidence reposed in him. His first duty as President was to announce that a meeting of the Council would be held on December 15, to elect the standing committees.

THE CONVERSAZIONE.

After the annual meeting, members and friends met together in an adjoining room, at a conversazione, which was again held in place of the annual dinner. Although there was a considerable number present, many felt that a dinner was to be preferred, and the hope was freely expressed that a dinner might be again held on future occasions.

An excellent introductory speech was made by the President, who briefly reviewed the progress of the Rose, and advanced the reasons which, in his opinion, were largely responsible for its increasing popularity.

A musical programme was ably rendered at intervals during the evening.

WATFORD AMATEURS AND GARDENERS'

DECEMBER 9.—The monthly meeting of the society was held at St. Andrew's Schools, on the above date. Mr. Hodgins occupied the chair. Mr. R. Davis enumerated some difficulties of amateurs in flower gardening, and invited professional gardeners present to supply information that would help them. Owing to Mr. A. E. Davies being unable to give his paper on "Amateurs' Difficulties in Vegetable Culture," Mr. W. B. Kettle gave an essay on "Soils and Subsoils and the Process of Growth in Vegetation."

PERPETUAL-FLOWERING CARNATION.

DECEMBER 13.—The winter exhibition, forming the ninth show of the Society, was held on this date in the Royal Horticultural Society's Hall, Vincent Square, Westminster. Taking the exhibition as a whole, it was very attractive, the masses of cut blooms as grouped together presenting a dazzling display of colours.

OPEN CLASSES.

The chairman, Mr. J. S. Brunton, offered a challenge cup, to be held by the winner until the next show, for three British-raised varieties introduced since January 1, 1908, shown in three vases containing 12 blooms. It was awarded to Mr. C. ENGELMANN, Saffron Walden, who showed Rex, a large flower with dentate edge to the petals that are coloured old rose; Carola, a large, crimson-coloured variety; and Harlequin, a yellow ground variety flaked with crimson. 2nd, Mr. W. H. LANCASHIRE, Guernsey, with Carola, Rose Doré, and Empire, a flower of good form and having a white ground.

The American Carnation Society offered a Challenge Cup in a similar class for three vases of 12 blooms each of American-raised novelties. This cup is also held by the winner for one year. It was won by Mr. W. E. WALLACE, Eaton Bray, Bedfordshire, with the varieties Dorothy Gordon, a flower of deep-rose tint; May Day, bright rose; and Pink Delight. 2nd, Mr. C. ENGELMANN.

A trophy known as the Covent Garden Bowl, together with a Silver-gilt Medal, was offered as the 1st prize in a class for two varieties of market Carnations, 60 blooms of each variety, 36 to be shown in two vases and 24 in two boxes each, as packed for market. Mr. WALLIS was successful, having Pink Delight and White Perfection; 2nd, Mr. ENGELMANN, who showed Carola and Regina.

COLOUR CLASSES.

Several classes were provided for certain named varieties or others of similar shade.

Enchantress, Melody, Fair Maid, Mrs. Chas. Knopf and similar colours.—The 1st prize was won by Mr. W. E. WALLACE with Enchantress, who received, in addition to the highest prize, the Society's Silver-gilt Medal; 2nd, Mr. G. LANGE, Hampton, Middlesex, with the same variety.

Mrs. H. Burnett, Pink Delight, May Day and similar colours.—1st Mr. W. E. WALLACE, who also took a prize for the best vase in Classes 5 to 16. The 2nd prize fell to Mr. C. ENGELMANN for seedling A1, a flower of old rose colour; and Mr. W. H. LANCASHIRE was 3rd for Mrs. Burnett.

Rose Pink, Winsor, Winona and similar colours.—1st, Mr. W. E. WALLACE, with Rose Doré; 2nd, Mr. LANGE, with Pink Enchantress; 3rd, Mr. W. H. LANCASHIRE, with the same variety.

Lawson, Afterglow, Alvina Aristocrat and similar colours.—1st, Mr. LANGE, with Mrs. W. C. Ward; 2nd, Mr. C. ENGELMANN.

Any white variety.—1st, Mr. G. LANGE, with perfectly fresh-looking blooms of Perfection; 2nd, Mr. W. E. WALLACE.

Any scarlet variety.—1st, Mr. W. E. WALLACE, with perfect blooms of Britannia; 2nd, Mr. W. H. LANCASHIRE, with Beacon; 3rd, Mr. LANGE, with Scarlet Glow.

Crimson or Clove.—1st, Mr. C. ENGELMANN, with Carola in first-class condition; 2nd, Mr. W. H. LANCASHIRE, with President.

Any other Self colour.—1st, Mr. W. H. LANCASHIRE, with Mikado; 2nd, Mr. C. ENGELMANN, with the same variety.

Any Fancy variety.—1st, Mr. C. ENGELMANN, with the brightly-coloured Harlequin; 2nd, Mr. W. H. LANCASHIRE, with Emperor.

Twelve blooms of any variety not in commerce.—1st, Mr. H. BURNETT; 2nd, Messrs. W. WELLS & Co. Special prizes in this class were presented by F. Blake, Esq., Lee-on-the-Solent, Hants.

Twelve blooms of J. Whitcomb Riley.—1st, Mr. W. E. WALLACE, with fairly full blooms of this canary-coloured variety.

Twelve blooms of Scarlet Glow.—Special prizes were offered by Messrs. F. Dörner & Sons Co., La Fayette, Ind., U.S.A. 1st, Mr. W. E. WALLACE; and 2nd and 3rd prizes were divided between the exhibitors Mr. G. LANGE and Mr. C. ENGELMANN.

One vase to contain 36 blooms arranged for effect, any foliage allowed.—1st, Mr. W. E. WALLACE, with a vase filled with May Day and Carola; 2nd, Mr. H. J. DUDNEY, Erith, Kent; 3rd, Mr. H. BURNETT. The 1st prize in this competition included a piece of plate given by Messrs. Felton & Sons, Hanover Square.

In the decorative classes the best basket of Carnations arranged for decorative effect was shown by Messrs. FELTON & SONS, Hanover Square, with a basket painted white and furnished with a gilt edging, which was filled with scarlet and white Carnations; 2nd, Mrs. K. F. HAMMOND, 116, King's Road, Chelsea, with a rose-coloured variety. Messrs. FELTON & SONS were the winners of a competition in bouquets, arranging one of Pink Perfection.

Mrs. A. ROBINSON showed the best decorated dinner table.

For a collection of Carnations in old and new varieties, shown as cut blooms, Sir RANDOLF BAKER, Bart. (gr. Mr. Usher), Blandford, Dorset, was 1st. The blooms were arranged gracefully in small glasses. The Society's Gold Medal was awarded to this exhibit.

For the best six Carnation plants a special prize was added to the 1st prize by Mr. W. H. Page, of Hampton, Middlesex. This was awarded to Sir R. L. BAKER, Bart., for well-grown plants carrying several flowers each; 2nd, Lord HOWARD DE WALDEN, Saffron Walden (gr. Mr. J. Vert).

In this section there were many small competitions, in which C. F. RAPHAEL, Esq., Sir R. L. BAKER, Bart., Lord HOWARD DE WALDEN, Geo. WEST, Esq., Mrs. F. NORMAN, Lord BURNHAM, and E. T. JOHNSTONE, Esq., took part.

For six blooms of the variety Carola, Sir R. L. BAKER, Bart., received the Society's Silver Cup. The same exhibitor was 1st for the pretty variety Vinca, a flower of moderate size and bright-purple tint not common in Carnations.

A good group of Carnations was shown by Sir DANIEL GOOCH, Bart. (gr. Mr. P. Wilkinson), Hylands Park, Chelmsford. It received an award of the Howard de Walden Vase.

NON-COMPETITIVE EXHIBITS.—Messrs. STUART LOW & Co., Bush Hill Park Nurseries, showed Carnations of the finest varieties. (Gold Medal.) Mr. G. LANGE, Hampton, was awarded the Society's Silver-gilt Medal for a collection of Carnations. Mr. C. ENGELMANN made a large display with Carnations against the end wall; his collection—an admirable one—received the award of the Society's Gold Medal. CECIL F. RAPHAEL, Esq., Porter's Park, Shenley (gr. Mr. A. Grubb), staged a group of pot plants of Carnations. (Gold Medal.) Mr. H. BURNETT, Guernsey, was awarded a Gold Medal for a display of Carnation blooms.

ANNUAL MEETING.

The annual dinner was held at Anderton's Hotel, previous to the annual general meeting. Mr. J. S. Brunton presided, and about 30 members and friends were present.

After dealing with the ordinary business, the Report of the Committee was presented.

EXTRACTS FROM THE REPORT.

"It is with regret that your Committee have to record the death of the Society's patron, H.R.H. Prince Francis of Teck.

"Your Committee view with satisfaction the steady rate of increase in the number of new members joining the Society.

"From reports received, the Year Book of the Society, which was published early in 1910, appears to have proved useful to members, and your Committee will endeavour to make the 1911 edition of equal if not greater value.

"The membership roll of the Society at October 31, 1910, was 271.

"The Committee report with deep regret that a serious breakdown in the health of the hon. secretary, Mr. Hayward Mathias, who has filled that post with great credit since the formation of the Society, necessitated his tendering his resignation in March. Your Committee approached Mr. Mathias with a view to

his continuing in office with an assistant. Mr. Mathias agreed, and Mr. E. F. Hawes was appointed joint hon. secretary. With this arrangement, the secretarial work has been efficiently discharged. At the Society's show in June, Mr. J. S. Brunton, on behalf of a large number of subscribers, presented to Mr. Mathias a piece of plate, with a suitable inscription recording appreciation of his services to the Society.

"The thanks of the Society are tendered to those, both in America and in this country, who so kindly offered special prizes, and to place on record its appreciation of the kindness shown by Mr. J. S. Brunton and Mr. C. Engelmann, and also by the subscribers of the Covent Garden Bowl, by placing additional challenge trophies at the disposal of your Committee. The number of challenge trophies now held by the Society is six.

"A practical working arrangement has now been matured between the hon. secretary of the Perpetual Flowering Carnation Society and the secretary of the American Carnation Society, with a view to preventing the duplication of names in either country, and of affording mutual information of interest to growers on both sides of the Atlantic."

The adoption of the Report was moved by the Chairman, Mr. J. S. Brunton, who spoke of the great advance made with the perpetual-flowering Carnation since the inception of the Society. Mr. S. Mortimer and several other members supported the proposition that the report be adopted. A paragraph concerning the offer of £20 made by the Society to the International Exhibition, 1912, was added to the Report, and with this amendment it was carried unanimously.

Lord Howard de Walden was again chosen as president, and the vice-presidents were also re-elected. The other officers were re-elected.

The six vacancies on the committee were settled by ballot, the result being the election of Messrs. A. F. Dutton, C. Engelmann, F. W. Harvey, A. Smith, F. Fitch, and J. Vert.

At a General Committee meeting held at the close of the annual meeting, the Floral Committee, with Mr. W. H. Page as chairman, were all re-elected.

LEEDS PROFESSIONAL GARDENERS' FRIENDLY BENEFIT.

DECEMBER 6.—The annual meeting was held at the Green Dragon Hotel, Leeds, on this date. Mr. Preece presided over a well-attended meeting. The progress made by the society continues to be satisfactory. The funds, which are invested in City of Leeds Corporation Stock, have been increased during the year by £200. The sum of £750 has been expended on sick benefits and £30 for death claims. None but gardeners are admitted as members. The following were elected officers for the coming year:—Chairman, Mr. John Donoghue, Bardon Hill Gardens, Leeds; vice-chairman, Mr. A. Allinson, Roundhay Park, Leeds; treasurer, Mr. John Franklin; and secretary, Mr. George Carver, Chapel Allerton, Leeds.

NATIONAL CHRYSANTHEMUM.

DECEMBER 10.—Members of the Floral Committee paid a visit to Messrs. H. Cannell & Sons' nurseries, Swanley, on this date, to inspect the trials of late-flowering single Chrysanthemums, which this firm has conducted on behalf of the Society. Owing to the damp autumn, few varieties were seen to advantage. The following members were present:—Messrs. D. B. Crane, Riding, Prickett, Wells, Oliver, Bevan, Ballantyne, T. W. Sanders, F. Ladds and E. F. Hawes. Three marks were awarded the following varieties:—Caledonia, Cannell's Crimson, Mrs. Robert Cannell and Cannell's White. Two points were awarded to the varieties Kathleen, Mrs. F. A. Collett, and Rosalind. The committee afterwards visited Mr. Philip Ladds's nursery, where many thousand Chrysanthemums were seen in bloom.

At the meeting of the Floral Committee, held on December 5, First-class Certificates were granted to the varieties Mr. Gilbert Drabble (ivory-white Japanese, shown by Mr. J. Bryant), Gothland (large, shown by Mr. J. Bryant), and Lady Forbes (bright terracotta single, shown by Messrs. W. WELLS & Co., Merstham).

DEBATING SOCIETIES.

BRITISH GARDENERS'.—The monthly meeting of the London branch of the association took place at Carr's Restaurant, Strand, on Thursday, December 8. Mr. W. H. North occupied the chair. It was announced that the entertainment held on November 26 was attended by nearly one hundred members and friends. The business of the evening having been dealt with, Mr. V. Cockram opened a debate upon the subject of starting a small holding as a Market Garden.

WARGRAVE AND DISTRICT GARDENERS'.—At the last meeting of the association, a paper on "Gardeners and Garden Management" was read by Mr. J. A. Hall, gardener to R. H. C. Harrison, Esq., Shiplake Court, Henley-on-Thames. Advice was given respecting many points affecting gardeners, their employment and methods of managing their gardens.

BATH GARDENERS'.—A well attended meeting of the society was held on Monday, November 22, at the Forester's Hall; Mr. S. Parrott presided. Mr. H. Roper read a paper on "Onion Culture." The lecturer advised sowing the seeds under glass, and transplanting the seedlings during April in a well-prepared bed. By this method the plants are almost immune from insect pests, and the crop is larger.

CHELMSFORD & DISTRICT GARDENERS'.—At the meeting held on Friday, December 6, at the County Laboratories, Mr. C. H. Wallis presiding, Mr. A. Turner, Assistant-Instructor in Horticulture to the Essex County Council, gave a lecture on the "Alpine Garden." Numerous dried, mounted specimens of Alpine plants were handed to the audience for inspection.

THE WEATHER.

THE FOLLOWING SUMMARY RECORD of the weather throughout the British Islands, for the week ending December 10, is furnished from the Meteorological Office:—

GENERAL OBSERVATIONS.

The weather.—Over the kingdom generally the conditions were dull and rainy, and often rough and squally. In many districts, however, the amount of precipitation was less heavy than of late. Along the north east and east coast of England there were some days without rain.

The rainfall varied a good deal, being more than the average in some districts, less in others. In Scotland E., the deficit was nearly an inch, while England S.W. had an excess of 1.3 inch. In the south-west of England some of the falls exceeded an inch in 24 hours; at Collymore 1.18 in. fell on the 8th, at Falmouth 1.33 in. on the 5th, and 1.18 in. on the 9th. At Sheepstor the total for the week was 6.67 in., the heaviest falls being 1.64 in. on the 5th, 1.85 in. on the 6th, and 1.37 in. on the 9th.

THE WEATHER IN WEST HERTS.

Week ending December 14.

A persistently warm, wet, and gloomy week.—The last 10 days have been all warm, both during the day time and at night, and more particularly at night. In fact, four consecutive nights were as warm as would be seasonable in the warmest part of the day at this time of year. The day temperatures were remarkably equable, the highest maximum reading during the 10 days in question being 52°, and the lowest maximum 48°, a difference of only 4°. The ground is now 3° warmer at 2 feet deep, and as much as 5° warmer at 1 foot deep, than is seasonable. Rain has fallen on all but one of the days in the last fortnight, and to the total depth of over 3½ inches, which is 1½ inch more than the average rainfall for the whole of December. During the same fortnight 19 gallons of rainwater, or the whole of the rainfall of that period, has come through the bare-soil gauge, and 18 gallons through that on which short grass is growing. Both gauges are a yard square. The sun shone on an average for only eight minutes a day during the past week, which is more than an hour a day short of the average duration of bright sunshine in the middle of December. On four days no sunshine at all was recorded. Taking the past fortnight the sun shone for altogether only 12 hours, and there were nine days which were altogether sunless. The winds were, as a rule, rather high during the week, and in the windiest hour the mean velocity reached 19 miles—direction S.S.E. There was about a seasonable amount of moisture in the air at 3 p.m. E.M., Berkhamsted, December 14, 1910.

SALES FOR THE ENSUING WEEK.

MONDAY—

Dutch Bulbs, at 11; Roses, Flowering and Herbaceous Plants, at 1.30; at 67 and 68, Cheapside, E.C., by Protheroe & Morris.

WEDNESDAY—

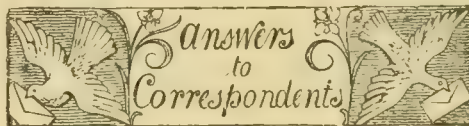
Dutch Bulbs, at 11; Roses, in all varieties, at 1.30; Palms and Plants, at 12; at 67 and 68, Cheapside, E.C., by Protheroe & Morris.

ENQUIRY.

CATALPA SPECIOSA.—I can hear of no place in Great Britain where any of the numerous trees of this species, which have been raised and distributed at various times by the Royal Horticultural Society and others, show any signs of becoming a timber tree; and, as the only tree of any age we know of is at Kew (raised in 1880), I shall be glad if any readers of the *Gardeners' Chronicle* can give a better opinion of the species than that of Mr. Bean (*Kew Bulletin*, 1907, p. 45) in which I entirely agree. H. J. Elwes.

Obituary.

JOHN GARRETT.—We regret to announce the death on the 9th inst., at the age of 70, of Mr. John Garrett, late gardener to the Rt. Hon. A. J. Balfour, Whittingehame, East Lothian. Mr. Garrett retired from his duties at Whittingehame in January last, after 36 years service, taking up his residence at Scotstoun, Glasgow. He was a native of the north of Ireland, and after serving under the late Mr. David Thomson at Archerfield, he was appointed gardener at Culzean. When Mr. Thomson was appointed to Drumlanrig in 1868, Mr. Garrett again joined his staff. Later, after a short period in the gardens at Wrotham Park, Barnet, he returned to Scotland as gardener at Whittingehame. Mr. Garrett was a very successful grower of indoor fruits. The funeral took place at Whittingehame on the 10th inst. He leaves one son and two daughters, the elder of whom was one of the first girl graduates of Edinburgh University.



* * * The Editors will be glad to receive, for consideration, large photographs of horticultural subjects, suitable for reproduction as Supplementary Illustrations in this Journal.

APPLE COX'S ORANGE PIPPIN: J. O. The shoots are affected with scab, caused by the fungus *Fusicladium dendriticum*. Thoroughly drench the trees now with a solution of copper sulphate at the strength of 1 lb. in 25 gallons of water, and, when the foliage appears next spring, spray with Bordeaux mixture at half strength, repeating the spraying at intervals until the Apples are about the size of Hazel Nuts.

BLACK CURRANT WITH SWOLLEN BUDS: W. A. The trouble is due to big-bud caused by a mite. If the bushes are only slightly affected, gather and burn the affected buds. In the case of badly-attacked specimens, grub up and burn them and plant the variety Boskoop Giant in future, as this sort is almost immune from attacks of big-bud.

CEDRUS LIBANI: Rev. T. A. H. The Cedar may be attacked by fungous parasites at the root, as frequently happens with old trees, in which case nothing can be done to save the specimen. If this is not the case, it is probably suffering from starvation at the root, and a top-dressing will have a good effect upon the growth. This top-dressing should consist of 4 inches of good loam, but the turf under the tree should first be taken off and the ground lightly pricked over—not deep enough to injure any roots—slightly beyond the extent of the branches. We do not think *Pernettyas* would thrive underneath the Cedar, but Ivy, Periwinkle, or *Ruscus hypoglossum* would succeed. The fallen needles should be left, but fresh ones would fall between the leaves of any of the above mentioned evergreens if they were planted.

CHRISTMAS BOXES TO GARDENERS: M. J. S. You will find an article dealing with the subject in the issue for December 8, 1906, p. 394.

CODLEUMS (CROTONS) SPOTTED: H. G. G. The fungus *Hormodendron hordei* has caused the spotting. Sponge the leaves with a rose-red solution of permanganate of potash.

FERN: J. K., Ilford. The fronds of the Fern are badly infested by eelworm. The brown "scorched-like" patches on the fronds contain numerous eelworms, which may easily be seen under the microscope. This eelworm lives in the soil and roots and works upward into the fronds. Destroy the plants by burning.

GARDENING EMPLOYMENT IN AMERICA: Journeyman. The information to which you refer was given by T. E. R. in the issue for February 10, 1906, as follows:—"There is no difficulty in young, well-trained gardeners getting good situations in this country. Head gardeners

and superintendents experience some trouble in securing good men, and New York seedsmen are always glad to hear of men coming from England, and are ready to answer all inquiries, although they offer no temporary employment. March and April are the best two months to arrive. The general wages for journeymen (or assistants, as they are termed) is about \$50 to \$55 per month, without board, or \$30 to \$35 with board, board and lodging being worth about \$20 per month. It would be useless to attempt to advertise in the American papers, because such advertisements are contrary to the law of the U.S.A. for anyone to become engaged before landing, and the parties who do so are subject to a very heavy fine, besides the probability of being deported.

GRAPES SHRIVELLING: J. C. S. No fungus disease is present. The injury is due to the loss of balance between the work done by root and stem, due to a difference of temperature and moisture inside and outside the house. Admit more fresh air to the vinery, and lower the temperature.

HELLEBORE UNHEALTHY: J. S. K., Gillingham. The leaves of the Christmas Rose show no fungus or insect pest likely to cause the death of the leaf. If the crown of the stem or the root appears to be unhealthy, send examples for investigation.

NAMES OF PLANTS: A. Hill. *Nephrolepis exaltata*.—F. L. 1. *Cryptomeria japonica pendula*; 2. *Maxillaria picta*.—F. F. 1. *Blechnum corcovadense*; 2. *Lastrea aristata*; 3. *Adiantum hispidulum*; 4. *Cheilanthes elegans*.

VIOLAS: J. R., Ilford. Viola "Mrs. J. H. Rowland" was sent out by Messrs. Dobbie & Co., Edinburgh, in 1906. Seedling No. 1 is of no value; seedling No. 2 is very distinct, and if the flowers can be grown large enough the variety is exceedingly promising.

WOODLICE IN ORCHID HOUSES: C. N. B. We believe the preparation you mention would be harmless to the Orchids. Write to the manufacturers.

WORKS ON THE ORANGE AND OTHER SPECIES OF CITRUS: F. B., Rio de Janeiro. *The Cultivated Oranges and Lemons, &c., of India and Ceylon*, by E. Bonavia; one volume of text and one of plates. Published by W. H. Allen & Co., 13, Waterloo Place, Pall Mall, S.W. The volume of text consists of 384 pages; that of plates of 259 plates, uncoloured. Date 1890. *Histoire et Culture des Orangers*, par A. Risso et A. Poiteau; 4to, 228 pages and 109 coloured plates. Paris: Henri Plon, Éditeur, 10, Rue Garancière; G. Masson, Éditeur, 17, Place de l'École et Médecin: 1872. *The Orange: Its Culture in California, with a Brief Discussion of the Lemon, Lime, and other Citrus Fruits*, by Wm. A. Spalding; 8vo, 97 pages. Riverside: Press and Horticulturalist Steam Print: 1885. *Citrus Culture*, by Albert H. Benson. Ed. 2; 8vo, 54 pages. George Arthur Vaughan, Government Printer, William Street, Brisbane: 1908. *Gum Disease of Citrus Trees in California*, by Ralph E. Smith and O. Butler; 8vo, pages 235-270; being *Bulletin No. 200* of College of Agriculture, Agricultural Experiment Station, Berkeley, California: 1908. The following works are quoted by Bailey in the *Encyclopædia of American Horticulture*, page 1,154:—*Orange Culture in California*, Garey, San Francisco, 1882; *Treatise of Orange Culture in Florida, Louisiana, and California*, Moore, New York and Jacksonville, Ed. 3, 1883; *Practical Orange Culture: Including the Culture of the Orange, Lemon, Lime, and other Citrus Fruits as Grown in Florida*, Manville, Jacksonville, 1883. We fail to recognise the pest to which you refer as being destructive to Tomatos in Mexico. Perhaps Dr. L. O. Howard, of the United States Department of Agriculture, Washington, D.C., might possibly be able to assist you in the matter.

Communications Received.—J. C. A. B. E. S. W. O. W. P. J. B. J. B. H. C. R. W. R. R. P. Totnes.—S. R. W. K. Aberdeen J. D. E. A. B. N. D. Framfield A. W. N. T. L. J. G. J. D. Yorkshire H. S. A. & B. Ltd. W. F. W. H. Y. S. A. R. P. B. E. M. S. & Co. S. G. S. V. & Co. "Lancashire" Y. N. Northampton H. L. J. Canadian H. C. Geneva J. D. France. O. S. J. N. L. H. C. G. V. P. Teneriffe—E. Y. Hunts. D. I. F. J. C. J. S. Co. Donegal—H. A. B. F. W. M. W. B. R. A. & C. P.

THE Gardeners' Chronicle

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"JOURNAL OF GENETICS."

WE extend, on behalf of horticulturists, a warm welcome to the new *Journal of Genetics*, the first number of which was issued last month.

The time has arrived when the detailed results of scientific experiments in plant- and animal-breeding should find a natural and congenial home in the pages of a British journal, and we are grateful, therefore, to Messrs. Bateson and Punnett, the editors, and to the Cambridge University Press, the publishers, for their enterprise.

It is significant that the opening number of the *Journal* deals not with out-of-the-way things, but with such homely plants as Potatoes, Peas, Primulas, and Petunias. There is, indeed, no necessity for the student of heredity to go far afield for his material. He recognises that, since we do not yet know the laws which govern the inheritance of the various characters possessed by any single organism, the commonest of our cultivated plants provide an inexhaustible supply of problems.

Before considering the chief of the contributions above referred to, it will be well to indicate what are the services which the horticulturist may well ask of the scientific investigator of Genetics.

In the actual production of new varieties, the florist and seedsman can "carry on"

very well. They have induced, by their own industry and skill, veritable transformations in many kinds of flowers—Sweet Peas, Roses, Carnations and the like; and it is to the florist and seedsman, and not to the Mendelian or other schools of experimenters, that the gardener will continue to look for improved races of cultivated plants. Nevertheless, the enterprising commercial plant-raiser is already making use of Mendelian facts. These facts have helped the florist and nurseryman in the past, and they will assist him more in the immediate future. To give but one example, Miss Saunders's study in the inheritance of Doubleness of Petunias, published in the first number of the *Journal of Genetics*, shows that the character of "doubleness" is due in these plants to the constitution of the plant, and is not due to methods of cultivation. Therefore, any attempt to produce a race of Petunias which comes true with respect to doubleness or which throws more than about 50 per cent. of doubles is foredoomed to failure. The only way to cause a batch of seed to throw doubles exclusively is to devise a process, which, in our opinion, should not prove impossible, whereby "single" seed is killed off and "double" seed left uninjured.

Beyond, however, this task of facilitating the constructive efforts of the professional plant-breeder, lies another and more important work for the Mendelian investigator. In spite of years of labour, acute observation, and endless trials, certain problems of the highest practical importance have baffled altogether the ingenuity of the horticulturist. To give examples chosen not only because of their importance, but also because one, at all events, of them is treated of by Dr. Salamon in the *Journal* under review—the disease-resistance and the "running-out" of cultivated varieties of the Potato present problems which, could they be solved, would lead to results of the greatest economic value. Though Dr. Salamon would be the last to claim that he has elucidated all the mysteries of the behaviour of the capricious tuber, nevertheless the trend of his researches seems to us to point to the conclusion that the "running out" or "degeneration" of a given variety is due primarily not to methods of cultivation, nor to old age, but to internal changes of constitution. Dr. Salamon, it is true, is properly cautious not to commit himself to a statement on the subject; but, nevertheless, it appears to follow from his observations that an ordinary variety of the Potato carries both pairs of a large number of separate characters; in Mendelian parlance, it is heterozygous for these characters. Being heterozygous, its apparent quality of shape, flavour, &c., conceals, though it does not exclude, other and opposite qualities. An example may make this clearer. A typically kidney tuber may be carrying not only the character (or characters) which make for oval, but also the character for round. It is known that Potatoes "sport" from time to time; that, for example, a long tuber may throw a round. If a plant can sport with respect to one character, it can do so with respect to others. If such characters, e.g., of quality, are not visible to the eye, how is the grower, no matter what his expert knowledge may be, to be sure that he is always, in selecting his immature tubers for "seed," picking out the

heterozygotes, which alone carry the characters on which the quality of that race depends? Again, with respect to disease-resistance, growers will watch with interest the experiments, begun originally by Mr. Arthur Sutton, and carried on subsequently by the Rev. J. Aikman Paton and by Dr. Salamon, with Lindley's *Solanum etuberosum*. Dr. Salamon's observations on this species or hybrid of uncertain origin are of the greatest interest. He confirms the conclusions reached by Mr. Sutton, who has kept *S. etuberosum* under observation for 20 years, that this species (!) is not susceptible to attack by *Phytophthora infestans*; but he adds the further remarkable observation that, now that Lindley's *etuberosum* has ceased, after 20 years' cultivation, to be sterile, it is giving rise to seedlings, some of which are susceptible to, and others immune from, late blight disease. Thus, of 40 seedlings of *S. etuberosum*, grown side by side with domestic varieties of Potato, 33 suffered from the attack of *Phytophthora* and seven resisted the fungus; whereas all the domestic varieties succumbed to it. The practical aspect of these facts will be evident when it is mentioned that the immune seedlings remained immune in the following year. Though it is premature to make a confident statement, Dr. Salamon's work is strongly suggestive of the hypothesis that immunity from late blight is a recessive character, and that this character will be found to breed true. Inasmuch as crosses have now been made between *S. etuberosum* and domestic varieties, we shall not have long to wait before knowing whether the problem of raising a disease-resisting Potato of culinary value has at last been solved.

THE MONT GENIS IN JULY.

I hope that readers of the *Gardeners' Chronicle* are not yet tired to death by envy combined with boredom at hearing the Mont Genis so persistently advertised. In any case, I did not begin it. But after my radiant experiences in June, I felt that I must certainly return a month later to see what sort of a summer flora it could be that there replaced the wonderful galaxies of spring. So full had the meadows then been that it seemed hardly possible that any second show could rival the first. However, after I had finished all my explorations in the Maritime Alps, I returned to the Mont Genis on July 29.

All the Gentians, Pansies, Potentillas were gone; gone was *Ranunculus pyrenaicus*; the Alpine sward had been eaten by the cows as bald and bare as any mown lawn. But in revenge, the meadow flowers were blazing with a richness that certainly equalled, if it did not actually surpass, the glories of the earlier display. The long grass was a jungle of *Campanula rhomboidalis*, visible in stretches of blue from far away; in herbage, less rank, tall spires of *C. barbata* made a paler note, amid the golden suns of *Arnica* and dark violet bells of *Campanula linifolia*. Here and there among the herbage, still lingered *Anemone alpina*, but it was hardly less beautiful thus than as big, ferny bushes on warmer slopes, each carrying half-a-dozen huge heads of towzled, silvery fluff. And everywhere towered high above the lay the stems of *Lilium Martagon*, brilliant and splendid here as I had never seen it. In more open places, *Aster alpinus* abounded, together with *Lilium alpinum*, *Trifolium alpinum*, Purple *Polygala* and *Dianthus neglectus*, which, however, did not seem so fine in form as on the Col de Pesio.

On the stone-dumps in front of the hotel, *Pryas*

* *Journal of Genetics*, Vol. I., No. 1, November, 1910. Edited by Mr. W. Bateson, F.R.S., and Professor Punnett. (Cambridge University Press.) Price per number, 10s.; per volume (4 parts), 35s.

was now in full beauty, with *Viola biflora* golden in the hollows. Here, too, *Hugueninia* was in full splendour, and showed me that I had never known it or appreciated it before. It is so fine a thing that the wonder is it is a Crucifer: the flowers, though small, are produced in such packed myriads that the general effect is of a close, golden cloud carried aloft on a tall stout stem. Then, over all the ridges, *Campanula pusilla* was in sheets of blue, and the three rare *Oxytro-*

foliage had been so specially remarkable in spring; and the whole northern slope, that before had been snowed under by *Ranunculus pyrenæus*, was now white with an even denser snowfall of *Anthericum Liliastrum*. And in the upper bogs *Ranunculus aconitifolius* was now in full bloom.

In the high mountains there was much to see. Not even at the end of July was *Campanula cenisia* in bloom on the stone slopes going up to

running up to join *C. cenisia* in the high stone slides. It was nearly in full flower, and the size of the bell, I must confess, disappointed me; there are fine, special forms to be found of *C. Allionii*: on the Mt. Cenis I only discovered one, with larger bells than usual, and of a soft pale lilac. On the upper stone slopes, both *Thlaspi rotundifolium* and *Petrocallis* were passing over; *Ranunculus glacialis* occurred, in a roseate form, occasionally, on these arid and unlikely banks, and *Anemone baldensis* was frequent. But the glories of this acclivity were *Gentiana brachyphylla* in slabs of sky all down the slope wherever there was grass, and in the stone-scrée among *C. Cenisia*, the abundant laughing faces of the Cenisian Pansy. And I must still declare that, apart from their different root systems, and the very different levels they inhabit, I cannot see any solid distinction, and certainly no horticultural distinction, between *Viola cenisia* and *V. Valderia*.

For a long time I could not find the Clear Lake; there was still an astonishing quantity of snow about. The upmost shingle was utterly barren, except for an ugly tussock or two of *Saxifraga biflora*. The *Thlaspi* was discoverable, but rare; nor was it much in evidence when at last I topped a ridge of snow and found the little lake lying clear in its tiny hollow. But this is one of the loveliest corners among all the high places of the world; the pool was still half embedded in a snowfield; the *Thlaspi* was only just beginning to flower, and *Gentiana brachyphylla* on the grassy ridge was still in bud. Other high places, too, I visited: I mean that pass which, in deference to Mr. Stuart Thompson, is never to be named. (But I can tell him that there is a good deal less *Eritrichium* there than there was!) Yet, though the King of the Alps shone azure on the rocks, *Ranunculus glacialis* was only beginning to send up bronzy buttons from the shallow waters that were molten ice, and *Androsace glacialis* was so dragged with glacier mud that its still flowerless mats could hardly be discovered. A little lower, and *Saxifraga retusa* continued in glory, and there were also *Primula viscosa* (née *latifolia*), and *Ranunculus pyrenæus* in fine form on that grassy plain which once had been full of snow *Crocus*, and now was starred, in its rills, with *Gentiana bavarica*. (Higher up, by the Savine Lake, this, of course, had given place to *G. imbricata*.)

Nor, for a final word, must I omit *Cortusa Matthiæi*, brilliantly blooming in its gorge, and *Aquilegia alpina*, forming such sheets of blossom at the lower end of the Mont Cenis Lake, that the effect was that of Bluebells in an English wood. *Reginald Parver.*

ORCHID NOTES AND GLEANINGS.

POLYSTACHYA PANICULATA.

IN fig. 202 we give an illustration of *Polystachya paniculata*, Rolfe, a pretty, new species from Uganda. The species was first imported with a few other curious plants by Sir Trevor Lawrence, Bart., K.C.O.V. (gr. Mr. W. H. White), who was awarded a Botanical Certificate for this species at the Royal Horticultural Society's meeting on August 16 last. At the two succeeding meetings it was finely shown by Sir Jeremiah Colman, Bart. (gr. Mr. Collier), and it was shown again on November 8, 1910, by Messrs. Charlesworth & Co., from whose plant the present illustration was sketched by Mr. Worthington Smith. It is said that the larger specimens which died coming over were three times the size of the plant illustrated, and bore proportionately larger heads of bloom. The colour varies in tint from coppery-yellow to reddish-orange, and a lens shows some fine purplish lines. In growth, too, it is peculiar, the pseudo-bulbs being flattened and the young growths handsomely blotched with purple, giving the plant a very ornamental appearance even when not in flower. It is a free grower when suspended in an intermediate house. It is not so



FIG. 202.—POLYSTACHYA PANICULATA: FLOWERS A SHADE OF REDDISH-ORANGE, SOMETIMES LIGHTER.

pids shared the stony places with *Dianthus neglectus* and *Gypsophila prostrata*. All along the roadsides, where *Geums* and *Alyssums* had been so brilliant, now lay wide violet stretches of *Calamintha alpina*. Down by the lake, in place of *Primula farinosa*, the ground to the south was a red sheet of *Sainfoin*. *Gentiana bavarica* occurred in the marshes, together with the long purple spikes of those *Orchis latifolia*, whose spotted-dog

the Lac Clair; but, anyhow, these slopes were all clear of snow by now, and a little lower, on a minor slide, we found half-a-dozen tufts of that most lovely plant, so thickly set with deep-cleft cups of pale steely-blue that the foliage was hardly visible. As for *C. Allionii*, which is reported as occurring "here and there," it was not only here and there, but literally everywhere, beginning quite low down in earthy banks, and

easy to ascertain what purpose is served by the upright, flattened stems of *Polystachya paniculata* as it is in *P. bracteosa*, whose dwarf, compressed pseudo-bulbs clip the branches of the trees, and enable the plant to escape the effects of the burning heat of the sun in the arid season and extract some moisture from the tree on which it is growing.

POLYSTACHYA GOLUNGENSIS.

This singular little *Polystachya*, probably not previously recorded as flowering in Europe, is blooming with W. E. Balston, Esq., Barvin, Potter's Bar. The plant is about 4 inches in height, the short pseudo-bulbs bearing narrow leaves of very firm texture on the upper part. The branched inflorescence bears many small, light-yellow flowers, resembling, in general appearance, those of the widely-distributed *P. luteola*. It was imported from the inland border of Uganda, and appears to be distributed over a considerable range in the same latitude, extending westward, although it does not seem to have been previously imported alive.

of a cross from *O. cirrhosum* × *O. crispum*, and *O. ardentissimum* (*O. Pescatorei* × *O. crispum*). It is curious to note that while the two parts *O. crispum* dominate the flower with respect to size and shape, *O. cirrhosum* appears in the somewhat apiculate termination of the segments, and *O. Pescatorei* in the lip, especially in the constriction of the middle part. In colour it is like a good *O. ardentissimum*, white blotched with rose-purple.

THE ROSARY.

ABOUT SOME DIFFICULT ROSES.

WHEN there are some glorious Roses, as undoubtedly there are in every rosarian's knowledge, that are not generally grown, they are not generally grown for a very good reason—they won't grow. One constantly sees enthusiastic amateurs who have accidentally succeeded with a difficult subject, writing to the gardening Press and recommending everyone to grow "this"—



FIG. 203.—*ODONTOGLOSSUM* "ROUGE DRAGON": PETALS AND SEPALS BLOTCHED WITH REDDISH-CRIMSON.

BRASSIA FORGETIANA.

BRASSIA FORGETIANA (see fig. 209, p. 471) was exhibited by Messrs. Sander & Sons, St. Albans, at the meeting of the Royal Horticultural Society held on December 6 last, and gained a Botanical Certificate. It is one of a very interesting collection sent to Messrs. Sander by their collector, Mr. Forget, from Peru. Some of Mr. Forget's plants have proved to be new, whilst others are not yet identified. The present species is of the *B. maculata* section. The plants are very floriferous, and the flowers whitish with chocolate-purple markings, the crest of the lip being of orange colour.

ODONTOGLOSSUM ROUGE DRAGON (*PHOEBE* × *ARDENTISSIMUM*).

THE illustration in fig. 203 represents this showy hybrid *Odontoglossum*, for which the exhibitor, W. R. Lee, Esq., Plumpton Hall, Heywood, Lancashire (gr. Mr. Woodhouse), received an Award of Merit at the Royal Horticultural Society's meeting on December 6 last. It is of complex parentage, *O. Phoebe* being the result

"even if you have but room for half-a-dozen Roses, mind you include this." As a rule, they do not even tell us in what part of the kingdom their garden is located, what is the nature of the soil, the situation, or even the summer they are referring to, so that a prospective follower of their advice does not know whether he is able to command even the elements of success. Quite recently I saw someone writing to the papers and recommending that old Dijon-Tea *Mme. Chauvry* as a pillar or arch Rose. It is a glorious bloom, if you ever get one, but anyone following this advice is courting disaster.

As an old hand, may I give a little of the cold water of experience, which, after all, is more useful than columns of rhapsody, about some of these fine, old, little-grown Dijon-Teas? Some years ago, in my old garden in South Hampshire, not very far from Winchester, I erected a series of arches 6 feet wide and 8 feet high—there were about a score of them—and set about growing pairs of the finest Dijon-Teas, among others, upon them. I may premise by saying my garden had a very fair Rose soil, a stiffish

loam upon a thin bed of clay, and was very well drained, almost too well, in fact. Of the Dijon-Teas I grew pairs of the following, *Bouquet d'Or*, *Mme. Chauvry*, *Duchesse D'Auerstadt*, *Comtesse de Turenne*, *Souvenir de Mme. Metral*, *E. Veyrat Hermanos*, and some others. Of all these, only the first and the last were of any real good as arch Roses. *Bouquet d'Or* grew fairly well for a year or two, but when the young wood got worn out it never put forth any strong growths in later years: it did better with me as a Standard. The first year after planting, *Mme. Chauvry* gave me two or three beautiful flowers, and then ceased to do anything at all, except gradually die out. *Duchesse d'Auerstadt* was a secondary sort of success: it did at first almost cover its arch, and for a year or two it threw a few of the loveliest yellow (really yellow) Roses I have ever grown or ever seen—deep, orangy, butter-yellow, self-coloured to the edge of the petal. In a few summers it gradually weakened away, refusing to make new growth or to open the buds it produced. I should like to hear of anyone having this on a wall. I wish I had wall space to give it a trial myself. *Comtesse de Turenne* did little or no good upon my arch: it grew very little; it would make a shoot or two a foot long and then bloom; it never got more than about 4 feet high. When you can get this Rose to grow, it is, perhaps, the very finest of all the autumn Roses; it seems little good early in the season. I remember a bloom of it being shown in Vincent Square at the autumn Rose show some years ago, one of the largest and most refined flowers ever exhibited. An excited amateur, a distinguished exhibitor, hurried me to see it, as he had never even heard of it. I damped his ardour by telling him I had grown it for years, but only got a decent bloom every two or three seasons: there were good blooms, but they were generally so late they got spoiled by the weather. I have here (in west Kent) now planted this Rose against a south wall, and it promises by the growth it has made to do very well. *Souvenir de Mme. Metral* was the very worst of the whole lot (it had a *Mme. Carnot*, I believe, as a sharer of that "bad eminence") and was dug up and burnt after the third season. *E. Veyrat Hermanos* is a Rose of another class, with me at all events, as the difficulty was to keep it anywhere within bounds; it grew rampantly, and made buds by the hundred, five out of six of which had to be cut off. Its one sin is that, except in hot weather, it will not open its buds; sometimes there was a single good Rose in the season, but when you did get a perfect flower you at once made up your mind you would never be without a plant of it. At its best it is as good as that most difficult and most glorious of all Roses, the *Comtesse de Nadaillac*, which no one can grow except Mr. Prince, of Oxford, and he seems to grow it like Buttercups. As this Rose has beautiful foliage and grows freely, it is worth keeping on the chance of a warm summer coming again. I have it here on a south wall, and it opened some blooms even in our late wretched season, the worst Rose year I have ever had.

There was one other Dijon Tea I grew to which I should like to refer, for it seems now to have disappeared from even the nurserymen's list, viz., *Madame Lacharme*; this Rose did very badly, but it threw me one or two of the very brightest lemon-yellow Roses of large size.

Of course, others may succeed with some or all of the above varieties, but I take my own experience with them to be an average one, and therefore maintain that it is extremely hazardous to recommend them in an off-hand way to the inexperienced. By the way, I was extremely surprised to see someone recently including *Gene de Lige*, and *Madame Perard* among the "best half-dozen yellow Roses." It wants a good deal of maintenance or a good deal of hardihood to maintain either of these among yellow Roses at this late day. R. P. S., *Flower & Garden, Hants, Kent.*

WICHURAIANA ROSES AND THEIR HYBRIDS.

THESE beautiful Roses, originally brought from Western China, and distinguished by a trailing, rather than climbing, habit, and intensely glossy and attractive foliage, have been greatly developed and improved by hybridisation. Many of the finest hybrids have come from North America, and especially from Philadelphia. They include varieties of supreme fascination, one of the loveliest being *Gardenia*, which I saw in great perfection in Sir Mark J. Stewart's picturesque garden at Southwick, in Kirkcudbrightshire, in the beginning of July. As the opening buds were a rich, apricot yellow, and the expanded flowers almost white in their complexion, the combination of colours on the same exquisite Rose trees was, with the glistening foliage, striking in the extreme. In the gardens of Mr. Carrick Buchanan, at Corsewall, in Wigtownshire, such *Wichuraianas* as *Lady Gay* and *Dorothy Perkins* were at least equally reflective, when I had the gratification of seeing them there, environed by masses

beautiful derivative from *Dorothy Perkins*; *Evangeline*, a strikingly-effective *Picotée* variety, with fragrant flowers; *Jersey Beauty*; *René André*; and *Minnehaha*. *Paul Transon*, a highly-interesting hybrid between *L'Idéal*, one of the finest of the climbing *Noisettes*, and a *Wichuraiana* variety, *Lady Godiva* (raised at Cheshunt), and the *White Dorothy*, a graceful native of Colchester, are invaluable acquisitions. *David R. Williamson*.

BANANA CULTURE IN ENGLAND.

THERE are few plants of so noble an appearance as the *Musa*, the massive leaves being almost equalled for size in the vegetable kingdom. A stately plant of *Banana* has few rivals for effect in the sub-tropical garden, and specimens are cultivated in many gardens in this country for associating with Palms and other fine-leaved exotics in the ornamental grounds in summer time. *Banana* fruits are now imported in such great numbers that they form one of the most

gross feeder. They need some kind of artificial manure about every 10 days, as soon as they become root bound. Water must be given in abundance at all stages of their growth, otherwise the bunches of fruit will be stunted and not set well. It usually takes from 13 to 15 months from the rooted suckers before the inflorescence begins to push from the centre of the plant. When the bunches of fruit, which frequently weigh from 50 lb. to 70 lb., are forming, they will require supporting by cord attached to the rafters, and another five months are required to develop the fruits, making in all from 18 to 20 months before they are perfected. During the last month it is advisable to limit the amount of manure and water. The number of "fingers" to a bunch varies according to the vigour of the individual plant. As soon as the fruits turn yellow they should be removed from the plant, otherwise the skins crack and spoil the appearance. One large house would produce fruits at all seasons, provided successional plants were grown. A slight shading during the hottest weather is better than excessive ventilation. The syringe must be used frequently to keep red spider in check, but too much water must not be allowed to reach the heart of the plants or the fruits will be liable to rot. Thrips sometimes attack the plants and spoil the appearance of the fruits; because of this an occasional fumigation of the house is necessary. *S. Ely, Lavington Park Gardens, Petworth, Sussex.*



FIG. 204.—BANANAS FRUITING AT LAVINGTON PARK GARDENS.

of radiant Sweet Peas, in the autumn of last year. Previously to that memorable visit, I must confess I was almost ignorant of their marvellous capability of floral and artistic effect. During last season, the special varieties of this character that created the finest pictures here were *Hiawatha* and *Christian Curle*, both of which produced, during the month of August, when other precious Roses were conspicuous by their absence, an immense number of exquisite flowers. *Hiawatha*, which is of an intense crimson colour, with an almost white centre, has an aspect at once fascinating and unique. *Christian Curle*, which was raised by Messrs. Cocker, of Aberdeen, is pale salmon-pink in complexion, and has proved itself, at least in my own garden, capable of splendid and impressive effects. It has also revealed what the French rosarians would describe as a "remontante" habit; but its numerous flower-buds in October, produced like a floral afterthought, come much too late for any hope of successful development. Other very striking Roses of the *Wichuraiana* race are *Alberic Barbier*, which is early-flowering and coloured like *Gardenia*; *Dorothy Dennison*, a

popular of fruits, not excepting the *Apple* or the *Orange*. But few have enjoyed the exquisite flavour and soft, melting flesh of a hothouse-grown specimen, as it is only occasionally that *Bananas* are grown for their fruits which can be had in perfection at any season of the year. A home-grown *Banana* is a useful addition to the rather limited number of dessert fruits obtainable during the early months of the year, and is to be preferred to a second-rate *Peach*, *Nectarine* or *Pear*. When grown under suitable conditions and properly matured on the plant, they are far superior to the imported fruits. The Chinese *Banana*, *Musa Cavendishii*, is the best for fruiting purposes. A glass-house with an internal height of about 12 feet will accommodate the tallest plants. The temperature of the house in winter should be maintained at 60° to 70°, and in summer time from 70° to 80°. The plants can be either grown in large tubs or in borders. The soil should consist of a good strong loam with sufficient sand to keep it porous, and some coarse bonemeal well mixed together. Plants grown in tubs require an abundance of water and food as the *Banana* is a

NOTES FROM A "FRENCH" GARDEN.

THE Lettuce plants are in a splendid condition, with the exception of a few which have been attacked by mildew. These latter have been dusted with flowers of sulphur, and the cloches in which they are growing have been kept closed.

The "Passion" Lettuces are not so forward this year as usual, as it has been necessary to give ample ventilation to keep them healthy. The *Cos* Lettuces are well established after their second transplanting. We intend to transplant 1,000 plants a third time (five to each cloche) as soon as the bell-glasses are available in January. This extra trouble will be repaid in having strong and sturdy plants for forcing late in February, as it is better to plant good plants late than to start too early with thin and drawn specimens.

The Cauliflowers are receiving ample ventilation to promote a sturdy growth and prevent too great a check when transplanting them in their final quarter in March.

All the frames and lights are ready to be placed on the ground intended for "cold work." They are generally set in position on a frosty day when the soil is hard.

The materials intended for the making of the hot-beds are ready. The manure collected in August and September will now be brought between the ridges of soil. If frosty weather sets in after Christmas, it will be spread over the ground. The hot-beds will not be started this year before January 20, for, although we started earlier last season, the Lettuce crop was better and more even in the last beds than in the first.

The quantity and quality of the seeds used in the hot-beds are important items in success. It is advisable to test their germinating powers previous to their insertion, especially as the last two summers have been unfavourable for seeds maturing properly. A known number of seeds should be placed between two pieces of felt or thick cloth in a room or greenhouse, and kept sufficiently damp to cause germination. The proportion of good seeds can be found, and the sowings arranged accordingly.

The festivities of the Coronation should cause a demand for choice fruits such as Melons, and those responsible for the management of a "French" garden should arrange accordingly.

A greenhouse will be absolutely necessary for the rearing of the seedlings from late in January, as it is difficult to grow young Melon plants in frames at that time. *P. Aquatias.*

NOTICES OF BOOKS.

TOWN GARDENING.*

It may be wondered for whom many of the so-called gardening books published every year are really intended. Large numbers are ostensibly written in the interests of the amateur, who, if he wades through a tithe of the literature provided for him, must indeed be a long-suffering individual. The work under notice is designed to serve as a guide for those having to do gardening in towns, but whether intended for amateurs or for such as make gardening their calling, it is difficult to judge. On the one hand, it deals with matters quite outside the purview of the ordinary amateur, while, on the other, it goes into minute details of work with which any garden apprentice is thoroughly familiar.

The book might have been edited with more care than has been expended upon it. The following extract is an illustration of the diction adopted by the author:—

Plants hate dirt; it is poison to them; and where a man can live and be in health for fifty years or more an oak tree may die in a year or two and all from dirt in one shape or other.

Take, for instance, a potful of rooted cuttings where a nice clean pot has been used, clean crocks carefully put in, over that a little Moss, and filled up with nice sweet soil that will scarcely dirt one's fingers. When reversed and turned out on the hand how nice it looks! how the clean white roots coil neatly and strongly among the soil and crocks! and how healthy the leaves above appear! above all how they grow! Now take one where an unwashed pot has been used, a lot of mossy soil crammed in, and the cuttings poked in anyhow, as some people do, and what is the result? Why failure and disappointment, of course. (Page 5 et seq.)

After the perusal of this, we are left wondering wherein lie the connections between man, Oak, and pot of rooted cuttings!

The author's idea as to the most suitable way of utilising a lawn does not commend itself to us any more than the haphazard method he recommends for the formation of designs. Under the first head he writes (p. 18):—

A few beds cut out of turf look nice if filled with bright flowers in summer; and if you can manage it, a fountain, with a basin as large as possible and a few gold-fish is very pretty and entertaining.

Under the heading of "Designs for Flower-beds" (p. 24) he says:—

Regarding designs for flower beds, any one possessing a fairly correct eye and average amount of taste can design and cut out suitable shapes. We always merely measure and peg out the principal points, corners, &c., of the beds on the turf, take a sharp spade and cut the design out straight away without any bother of plans or patterns, and no assistance but a line for straight edges, perhaps. . . . A visit to Battersea Park or the Crystal Palace will give one a better idea of what may be done in this way than almost any amount of description.

One can imagine what sort of designs would be likely to be produced after a visit to either of these places and a disregard of plans or patterns.

Perhaps the least trustworthy advice contained in the whole book is that given under the heading of "Hints on Planting Trees," more especially with reference to street planting. For whose benefit this is given it is hard to tell, but it is difficult to imagine where the author obtained experience to justify the advice which he gives. Thus on p. 61 we read:

Dig the hole for each tree as wide as you can—depth is not of much importance, 5 feet is sufficient—and we think it best to make a pretty hard bottom by ramming in 1 foot or more of gravel for tap roots should be prevented or at least checked. If you must use any of the old soil work it up well, and we should recommend its having been excavated some time previously and turned over frequently in heaps exposed to frost or sun. Use this more round the sides of the hole, which should be certainly 6 feet in diameter and as much larger as possible, and use the fresh stuff round the roots of the tree. Make the soil firm and leave a hole for the tree. These should be strong saplings of 6 or 8 feet high, but we do not recommend their being much larger as the

check is sometimes fatal to large trees. . . . Now if it can possibly be managed, do not shut out the roots from the healthy influences of the sun and air, but leave the soil exposed for as long a space as possible and put a light iron or wooden railing round to keep off enemies or intruders. A space at least 5 feet or 6 feet in diameter should be left and railed in in this manner.

Imagine anyone excavating holes in a London street for trees in the manner described, or allowing the material excavated to lie on the side of the road till it is weathered! What practical man would ever suggest fencing in a space of 6 feet in diameter around 6 feet saplings in a public thoroughfare?

Faults such as these detract very considerably from the value of the book as a guide to town gardening. W.

SCOTLAND.

THE WAVERLEY MARKET, EDINBURGH.

In reference to the note on the proposed heating and ventilating of the Waverley Market (see p. 442), Mr. H. N. Ellison, West Bromwich, writes as follows:—As a regular exhibitor at the Edinburgh Chrysanthemum Society's Show in Waverley Market, I am pleased to learn that the Edinburgh City Council are at last considering the advisability of heating the building. There is not the least doubt but that the coldness of the building (especially in the last two years) has been the principal cause of the very large falling off in the attendance, and also, in a great measure, for the few trade exhibits staged, especially this year. Last year, Ferns worth £10 were completely spoilt in my exhibit through the cold, many being so badly damaged that I instructed my assistant not to pack them to send home. Now that the matter of heating the building has been raised, the Scottish Horticultural Society should endeavour to press it forward so that it may not get shelved as on previous occasions.

SUGGESTED REMOVAL OF EDINBURGH VEGETABLE MARKET.

At the recent annual meeting of the Edinburgh Market Gardeners' Association, the proposed removal of the vegetable market from the Waverley Market was discussed. The step has been advocated for some time by members of the Town Council, the intention being to remove the market to the site in New Street, formerly occupied by the Corporation gas-works. The market gardeners are opposed to this, and they presented to the Council a petition against the proposal. Mr. David King, the chairman at the meeting, referred convincingly to disabilities that would be entailed by the proposed removal, and Councillor Chessier, the convener of the Corporation Markets' Committee, also spoke, his remarks being of a reassuring nature. Another suggestion has been made that a new fruit, flower and vegetable market should be established at Gorgie, where the new meat market is established. But in either case—at New Street or at Gorgie—the market gardeners would be put to great inconvenience, and their trade would be dislocated. It is to be hoped that the scheme of removal will be finally dropped, although the party on the Council in favour of removal is a strong one. On the other hand, the interests of the market gardeners are of great importance, and the proposed removal would be most inconvenient to the public as well as to the wholesale and retail dealers.

BLAIRGOWRIE AND RATTRAY FRUIT-GROWERS' ASSOCIATION.

A satisfactory statement of the year's work was submitted at the annual meeting of the association held in Blairgowrie recently. The quantity of fruit sold had been slightly less than last year, although it exceeded by about 100 tons the sales

of the previous season. The larger proportion of the Strawberries realised £30 per ton, the average prices for these being £1 8s. 1½d. per cwt. The average returns for Raspberries showed 13s. 5½d. per cwt., the lowest price realised being £10 per ton, and the highest £20. The average price for Black Currants was £1 17s. 4d. per cwt. Office-bearers were appointed for the year, ex Bailie Adamson being elected president, and Mr. Jno. Stewart vice-president.

CHAIR OF AGRICULTURE AT ABERDEEN.

A conference took place on Friday, 9th inst., between representatives of the Aberdeen University Court and the Aberdeen and North of Scotland College of Agriculture, to consider the question of the proposed Chair of Agriculture, towards which Lord Strathcona has given £10,000. Principal George Adam Smith presided. The question was considered, with reference in particular to the method of appointment in view of the proposal that the new professor, whilst remaining a member of the University staff, should also conduct the work of his department in the Agricultural College. The principal had circulated a memorandum dealing with the system of professorial appointments by joint bodies, as in Glasgow and elsewhere, and there was also submitted to the meeting a memorandum prepared by Mr. James Hendrick, of the Aberdeen College of Agriculture, in the following terms:—(1) The University Court and the Governors of the College of Agriculture might agree to depute the selection of a person suitable for the appointment to a joint committee. (2) It might be an understanding between these bodies that under present conditions, and while there is only one Chair in Agriculture, the professor appointed should also be the chief official of the Agricultural College, and have general oversight and control of the work of the college, for which he would be responsible to the Governors of the College. (3) The central classes of the Agricultural College at present form a University department, and the lecturers in agricultural subjects are University lecturers. After the appointment of a professor, the Senatus and University Court would continue to exercise similar control to that which they exercise at present over the education and discipline of the central classes and the granting of degrees and diplomas. The main change affecting the college would be that the chief teacher of the college staff would have a seat on the Senatus, and the college staff would thus have direct representation on that body. (4) The Chair in Agriculture should not be confined to one professing agriculture in any restricted sense of the term, but should be open to distinguished specialists and teachers in any of the chief branches of agricultural science. The conference was adjourned for a week.

ABERDEEN NATURAL HISTORY AND ANTIQUARIAN SOCIETY.

Under the auspices of this society, a lecture on "The Senses of Plants" was delivered in the Aberdeen University Buildings by Dr. James W. H. Trail, Professor of Botany in the University, on Friday evening, 16th inst. There was a crowded attendance, and Mr. Alexander Mackie, Principal of Albyn Place School, Aberdeen, the President of the Society, occupied the chair. Professor Trail gave an interesting account of recent investigations with plant-sensitiveness, and showed that all members of the vegetable kingdom possess the power of responding purposefully to the stimuli of light, &c.

LEGACY TO A SCOTTISH GARDENER.

Mr. W. Harvey, gardener to the late Mr. J. H. Houldsworth, Rozelle House, Ayr, has been left a legacy under the terms of his employer's will.

* *Town Gardening*, by B. C. Ravenscroft. (London: J. Murray, publisher.) Price 2s. 6d.

HOAR FROST IN THE ALPINE GARDEN.

ONE of the charms of the Alpine garden is found in its beauty and interest at all seasons of the year. How neat and pretty are the clumps of encrusted Saxifrages during the winter, and how fresh and luxuriant the appearance of the banks of the mossy species—giving no sign of the decay and desolation which pervade the border containing herbaceous plants. But the small Alpine garden, is, perhaps, never so pretty



FIG. 205.—SEED-PODS OF *SEDUM SPECTABILE* WITH HOAR FROST.

during the winter as when the fairy fingers of the hoar frost have descended upon it, and with their magic touch produced beauty of form unattainable at any other time of the year.

The most untidy fragments of withered foliage become ropes of glittering crystals, while the lime pores of the encrusted Saxifrages have a special attraction for the hoar frost, and take upon themselves an incrustation greater far than in their heyday of growth, in May. Old seed pods especially, assume the daintiness of flowers from another world, and many of the decumbent fruit-stalks of the Sedums, which would be passed unnoticed in mild weather, resemble, after a night's hoar frost, pieces of coral, rather than remnants of the past season.

In my own garden I make a special point of leaving seed-vessels on many plants for this purpose, such, for instance, as the strong stems of *Sedum spectabile*, *Sedum Turkestanicum*, and *Armeria* with its tall, nodding seed-heads, which droop so gracefully under the weight of the hoar frost. Many of the plumes of Saxifrages are also left upon the plants, but these are very liable to decay before the coming of the hoar frost.

Anyone who has not seen an Alpine garden under a thick hoar frost will find it hard to believe how beautiful and fairy-like it is, with every chink and cranny filled with plants mantled in crystals, and affording a remarkable contrast to the dull and forsaken appearance of the ordinary villa garden in winter-time.

Snow also adds greatly to the beauty of the alpine garden, although it is hardly so delicate and graceful as the hoar frost. Still, it has the advantage—when melting—of disclosing many little treasures just emerging from their winter rest, and ready to spring into flower in a marvellously short space of time. The accompanying illustrations (see figs. 205-208) are from photographs taken by myself, and represent the effects of snow and hoar frost in my Alpine garden in E. ex. *Reginald A. Malby*.

CHRYSANTHEMUMS.

DIRECTLY the last blooms are removed from the plants, a start should be made in preparation for next season's display. The procuring of suitable cuttings is of the greatest importance, as success depends largely upon the manner in which the plants grow from the start, and in this respect the condition of the cuttings is an item of much concern. When the plants have finished blooming, cut those varieties that produce plenty of shoots suitable for rooting, down to within a few inches of the soil. Some, however, amongst the Japanese as well as the Incurved varieties do not form many basal growths, in which case do not cut the main shoots lower than 2 feet from the soil, as more opportunity is then afforded for the plant to break and produce cuttings, although they are not so good for the purpose as those that develop from the base, for the reason that those growing out of the hard stem are much more likely to show flower-buds prematurely. This type of cutting should be avoided as much as possible, although in some cases it is the only one that can be had. Stand the stock plants as close to the glass as possible in a cool house in order to induce a stocky growth. No place is better for the purpose than a vinery or Peach house where the trees are at rest, for there is plenty of light in such a structure. A cold frame is also suitable, but protection must be afforded during frosty weather, or the young growths, being tender, will be spoilt. Some varieties will develop shoots at the base so freely that they are in danger of becoming weakened through overcrowding. When this occurs, thin out the weak shoots in good time, to give space to the stronger. Water the plants sparingly, as too much moisture at the roots is apt to induce a yellow, sickly growth. Green and black aphids occasionally attack the points of the young shoots: Tobacco powder is the best specific to use for destroying these pests, and sometimes it may be necessary to dip the young shoots in Tobacco water, as the leaves may be curled, shielding the insects from the powder. Different growers hold different opinions as to the best time for inserting the cuttings, but generally the early days of December give the best results. Chrysanthemum plants intended for the production of large, high-quality blooms, require a long season of steady uninterrupted growth in a cool temperature. Growth thus produced has the best possible chance of becoming solid through the proper maturation of the shoots. The wood of late-struck plants never ripens thoroughly, and this is



FIG. 206.—THE SEED-PODS OF *SEDUM SPECTABILE* COVERED WITH SNOW.

especially a disadvantage to growers in northern counties. The proper maturation or ripening of the wood is an important point; plants ill-matured cannot produce blooms of great depth although they may be wide, but depth is perhaps the most important quality in an Incurved Chrysanthemum. Another objection to late propagation, and a serious one for the small

grower, is that the old plants occupy valuable space for two months longer than is necessary. Cuttings obviously occupy much less room than is needed for accommodating the old plants, and at a time of the year when indoor space is valuable. There are probably more diverse opinions as to which is the best method of propagation than upon any other phase of Chrysanthemum culture. Cool treatment is the correct method, no matter how the cuttings are inserted. Were it not that frost



FIG. 207.—HOAR FROST ON *SEMPERVIVUMS*.

often checks the growth for weeks, although it will not kill the cuttings when growing, cold-frame treatment would be the best. To overcome all the difficulty, insert them in a hand-light or propagating box in a cool house, where frost can be kept out easily. A single cutting in a small pot is better than several in the same pot, box or pan, for the reason that when it is ready for transferring to larger pots, it receives no check through damage of the roots. Some persons will say this is too small a matter to heed, but success is made up of attention to minor details, and the fewer checks a plant receives the better. Shoots taken some distance away from the stem, about 3 inches long, and cut square, below a joint, should be inserted firmly in sandy soil. Place the pots on a base of ashes inside the case or hand-light, and the cuttings will make roots in about three weeks, provided they are prevented from flagging. Remove the lights every morning, to dissipate the condensed moisture on the glass, and wipe the inside of the glass every evening. This will assist to keep the inside of the propagating case drier, and the cuttings will be less liable to damping. As soon as the roots show through the soil near the pot, admit air for a few hours during the daytime at first, increasing the supply gradually, until the lights are removed altogether. This will induce a stocky growth, thus laying a thorough foundation for the plant. In the case of the decorative varieties, of which the single-flowered sorts are so important, the first week in January will be early enough to insert the cuttings. *E. Molynceux*.

INCURVED CHRYSANTHEMUMS.

At the recent conference of the National Chrysanthemum Society, a paper on Incurved Chrysanthemums was read by Mr. Wm. Higgs. We make the following extracts:—

I propose to give, as far as possible, my own experiences in the culture of incurved Chrysanthemums. On looking back to the old varieties, the Queen family, the Princess

of Wales and its sports, the Teck family, Venus, Refulgence, Princess Beatrice, John Salter, Lady Talfourd, and White Globe, one cannot help noticing the great strides which have been made in size and colour, although, for colour, we have not yet beaten Refulgence as a dark variety, or Jardin des Plantes as a yellow.

As regards shape, the members of the Queen family of 14 or 15 years ago were models of what an incurved flower should be. No variety could be considered nearer perfection than a well-grown bloom of Lord Alcester or Empress of India. Amongst all our varieties of incurved Chrysanthemums we have not one resembling Lord Alcester. Taking everything into consideration, Clara Wells is the best variety we have at the present time.

Varieties that fail in producing sufficient cuttings need special treatment. This is best carried out in the following manner: Take some good-quality loam and sift it through a coarse sieve. Mix this with the same quantity of sifted, decayed leaf-mould and apply it lightly as a top-dressing. Plants treated in this manner not only produce more cuttings but the shoots are considerably stronger and are more likely to develop into good plants.

same pot it is not only possible, but very probable that the growth of the cuttings will be checked at the first repotting.

Prepare a frame with a bed of sifted ashes for the reception of the 'thumbs,' a frame where heat can be turned on in severe weather, and the temperature kept fairly constant. Plunge the pots to some little depth in the ashes, and give the cuttings a light syringing to prevent them from flagging. For the first potting, equal parts of sifted loam and decayed leaf-mould should be used, with some silver sand to keep the soil open. No manure of any description should form part of the compost, for at this period the chief thing to guard against is having the plants too strong. One of the most important reasons why some growers fail to produce the smooth, round buds which are necessary to make the perfect flower can be traced to this source. If manure is included as a constituent of the soil, the growth becomes too rank, hollow stems are produced, and, generally speaking, the flower which follows the hard, badly-shaped bud, does not open freely.

The earliest plants will be ready for the first repotting in large 60's from the middle to the end of January, while the repotting of those of slower

careful and regular attention until the end of May, when the most important stage is reached. This is the final shift into the flowering pots, 9 inch or 10 inch, according to the characteristics of the growth of the plant. The weaker varieties, originally in 5-inch pots, will now require 9-inch pots. All other varieties can be moved into 10-inch pots.

The composition of the soil at this potting is of the utmost importance. It is best to prepare it two or three weeks in advance. The best method is to mix up the soil in two separate heaps, the chief difference in the composition of the heaps being that one contains manures, while the other does not. It is necessary to have two different strengths of soil, for some varieties, if grown in strong soil, would produce very coarse flowers, which no amount of dressing would make fit for an exhibition board. We may roughly classify all kinds of incurved blooms into two divisions—those which naturally come with a true, narrow incurved floret, and those which, unless specially treated, would probably resemble a small Japanese variety. In the true incurved varieties, the chief aim is to obtain a big bloom, for in nearly every case the flower produced will not be rough and uneven. Hence manure is included in the constituents of the compost for the weak varieties. In the case of the strong sorts, the chief aim must not be size alone, it must be the biggest flower than can be obtained, and at the same time the best formed, smoothest, and most incurved. Where before we could almost ignore the shape of the floret, here it becomes the chief factor, and when growing 'strong' varieties we must fine them down, as it were, and produce as fine a floret as possible.

For the weaker sorts, the following compost is suitable: Twelve barrowloads of good turfy loam, three barrowloads of horse manure, which has been treated in the same manner as when preparing soil for a Mushroom bed, two barrowloads of decayed leaf-mould, and one barrowload of wood ashes. To this add $\frac{1}{2}$ cwt. of bone-meal, a 10 inch pot full of soot, and the same quantity of Veltha.

In mixing the soil for the stronger sorts I leave out both the horse manure and the bone-meal, substituting in equal proportions leaf-soil and wood ashes. The soil is well rammed with a piece of wood, shaped specially for the purpose. This ramming is most important, and on no account must it be neglected, as it induces short-jointed growth, followed by deep, well-formed flowers. It is necessary to leave room at the top of the pot for two top-dressings of finely-sifted loam and leaf-mould in equal proportions with the addition of a little Ichthemic guano. The first top-dressing should be given at the middle of August, and the second after the plants are housed at the middle of September. Having completed the final potting, the plants are stood out in the open in a favourable position.

Watering at this stage needs special care. Excessive saturation of the soil causes the leaves to turn yellow. Rain water produces the best results, and should be used if procurable.

After a hot, dry day, a good syringing overhead during the evening will be beneficial. It also helps a great deal to keep down thrips which do much damage to the young shoots and buds. Beside thrips, the grower has to guard against attacks of mildew, fly, and Chrysanthemum rust. As a preventive and a cure for mildew, potassium sulphide has no equal. When dissolved in water, in the proportion of $\frac{1}{2}$ ounce of sulphide to one gallon of water, it is very effective. The best method of applying this solution is to stand the plant in an oblique position, so that the pot rests on a stool, then none of the specific falls on the surface of the soil.

I find guano, sheep manure with an addition of soot, and fresh blood from the slaughter-house all of great value in improving in many ways the condition of the plants and flowers. I begin to apply sheep manure early in August, starting with



FIG. 208.—EFFECT PRODUCED BY HOAR FROST IN THE ROCK-GARDEN.

When inserting the cuttings, the late varieties must receive the earliest consideration. I always insert these as early as the first week in December. Frank Hammond, Mrs. F. Judson, Mrs. J. Hygate, C. H. Curtis, W. Pascoe, Mrs. J. Wynne, Duchess of Fife, H. Hearn, Egyptian, and Miss Nellie Southam, may all be classed as late sorts, and must be started early.

Varieties which require a second crown bud should be inserted during the third week in December. A list of these would include such varieties as Lady Isabel, Mrs. G. Denyer, H. W. Thorp, Mrs. Barnard Hankey, Pantia Ralli, Iolene, W. J. Higgs, Romance, Le Peyrou, Amber Beauty, Emblème Poitevine, Topaze Orientale, Triomphe de Montbrun, May Phillips, Miss F. Ashworth, Doris Rayner, G. F. Evans, W. Biddle, Calypso, and Hanwell Glory. Other varieties which require a late crown bud might be inserted about the same time. Amongst these are Clara Wells, Buttercup, Daisy Southam, and Frank Trestian.

I always insert the cuttings singly in thumb pots. If three or four cuttings are placed in the

growth will follow later. After they are potted, place the plants back in the frame just as before, except that they should be given a little more room. When ventilating the frames, a little more air may be allowed after the plants have been potted for two or three days. In the beginning of March, when the worst of the winter frosts are over, the plants may be transferred to cold frames. Some effective covering must always be kept near at hand in case of severe cold at night, for a very low temperature is fatal to the young and tender plants. An excellent protection can be made by first covering over the frame with stout garden mats, and then placing a layer of straw over these.

The next shift into 6-inch pots should take place towards the end of March, the composition of the soil being the same as before, but the loam should be a little coarser. Six or seven days after this second repotting has been completed, select the varieties which require second crown buds, and carefully take out the point of each plant.

Special care will be needed in watering, and a light spraying each day will be found beneficial. The plants can now be allowed to grow on with

a fairly dilute solution and increasing the strength as the plants get stronger. Waterings with diluted blood or guano should be substituted sometimes for the sheep manure. Care must be taken not to make the former too strong, or the plants will receive a check, and even, perhaps, be spoilt altogether. A normal mixture is obtained if half a gallon of coagulated blood is mixed with 25 gallons of water; that is, a two per cent. solution.

Housing the plants should be commenced about the middle of September and a dry, fine day should be chosen. It will be easy to pick out the plants on which the best blooms will probably develop, and these may occupy the best places under glass. As the flowers expand, a slight shade will be necessary to protect the newly-opened petals from the rays of the sun. The shading should be such that it is easily put up and readily removed, according to the vagaries of the October weather. An even temperature should be aimed at in the houses, for if the thermometer rises too high the petals will become reflexed. A temperature of 55° Fahr. during the daytime falling to 50° at night will be suitable. As regards ventilation, a little fresh air should be admitted at the front and top of the house at night, the amount varying according to the outside temperature. The air must always be kept circulating, so that moisture does not condense on the petals.

"Dressing" often overcomes the great difficulty of procuring 36 flowers at their best at the same time. Take, for instance, a big flower which is not perfectly developed. All the short florets in the centre should be carefully taken out with the long forceps, then, turning the flower upside down, the florets should be gently pressed to fill up the hole in the centre. The badly-shaped florets must be taken out if they have not already been attended to while the flower was growing on the plant. Then with the small tweezers commence arranging the florets in position from the centre downwards. Some flowers require an hour's work spent on them, others much less, the time depending upon how perfectly the bloom has been grown.

A selection of the best 36 incurved varieties at the present time includes Clara Wells, Buttercup, Ethel Thorp, Lady Isabel, Mrs. G. Denyer, Mrs. Barnard Hankey, Duchess of Fife, Emblème Poitevine, Daisy Southam, J. Wynne, Romance, Frank Hammond, Topaze Oriental, C. H. Curtis, Triomphe de Montbrun, May Phillips, Frank Trestian, W. Pascoe, Pantia Ralli, Fanny Lemon, Miss Nellie Southam, W. D. Parkins, W. Higgs, G. F. Evans, Boccace, Mrs. J. Wynne, Souvenir de Wm. Clibran, W. Biddle, Godfrey's Eclipse, Le Peyrou, Calypso, H. Hearn, Amber Beauty, Egyptian, J. Agate, and Iolene.

The Week's Work.

PLANTS UNDER GLASS.

By JOHN DONOGHUE, Gardener to JOSEPH PICKERSGILL, Esq., Bardon Hill, Westwood, Yorkshire.

Hippeastrum (*Amaryllis*).—Some of the bulbs which ripened earliest and do not require repotting, should be started into growth for flowering in the New Year. Place them in a light position, maintain a moist atmosphere and a temperature of 50° to 55°. The bulbs will not require much water until the flower-spoke is well advanced, as comparative dryness will have the effect of retarding the growth of the leaves until the flowers have developed. If any of the plants commence to make their growth before flowering, it will be better to cut the flower spikes, and use them as cut blooms rather than to employ such plants for house decoration which would cause them to suffer a harmful check. Previous to starting the bulbs into growth, treat them with some insecticide, to destroy any insect pests present; also, overhaul the drainage material. When the plants have finished blooming, some of the surface soil may be removed, and replaced with good, lumpy, fibrous loam. Keep these plants

separate from the main batch, and feed them regularly with some artificial manure to strengthen the bulbs for flowering another season.

Gloxinia.—As the autumn-flowering batch of *Gloxinias* passes out of bloom, the pots containing the tubers should be placed on a shelf in the intermediate stove, for the plants to mature. They will require very little water, but considerable ventilation. When the tubers are well-ripened, the withering foliage may be removed, and the plants stored in a dry place, where the temperature does not fall below 45°. Another batch may be started into growth, selecting those tubers which have rested the longest time. A gentle spraying will afford all the moisture necessary at the start, as great care must be exercised not to apply too much water until the roots are active. This batch should produce an excellent display of bloom early in the spring. It is best to allow the corms to remain in the same pots undisturbed, as they appear to start into growth earlier under this treatment. When growth is active, dilute liquid manure may be given at alternate waterings; bonemeal used as a top-dressing will also prove beneficial.

The forcing house.—A further batch of *Lilacs* may be started into growth. Forcing should be gentle at the start, moving the plants to a warmer structure later, but bearing in mind that the less artificial heat is employed, the better, as blooms developed under cool treatment last much longer than those produced in excessive warmth. *Rhododendron molle* (*Azalea mollis*) may also be brought into heat. The imported plants are usually better ripened than home-grown ones, and they give the best results. *Prunus triloba* and some of the *Spiræas*, such as *S. confusa* and *S. Van Houttei*, are excellent subjects for forcing. The Snowball tree (*Viburnum plicatum*) is another useful shrub that forces well, and a well-flowered specimen makes a fine subject for conservatory or greenhouse decoration. In the case of *Rhododendron Cunninghamii*, it is imperative not to submit the plants to strong heat at the start, or the buds will almost certainly refuse to expand. A few plants should be placed in a warm greenhouse, until the buds begin to swell, when they may be transferred to a house having a temperature of 50° to 55°. They will need plenty of moisture in the atmosphere, and frequent syringings.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir TREVOR LAWRENCE, Bart., Burford, Surrey.

Dendrobium.—As the deciduous and semi-deciduous *Dendrobiums* are always a feature in the Orchid houses during the late winter and early spring months, it is a wonder that more amateur growers do not form collections. Besides such well-known species as *D. Wardianum*, *D. crassinode*, *D. nobile*, *D. aureum*, *D. chrysanthum*, *D. Pierardii*, *D. tortile*, *D. transparens*, *D. crystallinum*, *D. Devonianum*, *D. lituiflorum*, *D. superbum*, and its varieties *Burkei*, *Dearei*, and *Huttonii*, and *D. regium*, there are numerous hybrids that are well worth growing. Among them a few may be enumerated, namely, *D. splendidissimum*, *D. micans*, *D. Cybele*, *D. Juno*, *D. melanodiscus*, *D. Dominicanum*, *D. Dalhousienum*, *D. Chessingtonense*, *D. Thwaitesiae*, *D. Venus*, *D. Wiganiae*, *D. Wiganianum*, *D. Melpomene*, *D. Ophir*, *D. illustre*, *D. Sibyl*, *D. Clio*, and *D. Lady Colman*. Many of these plants which have been rested properly will now be showing their flower-buds, and when the buds are well out of the sheath in which they are enclosed, the plants may be removed from their resting quarters into an intermediate house, where the atmospheric temperature at night is kept at about 55°. Let them remain there until the flowers are about to expand, when they should be again removed to the lightest position available in the warmest house or plant stove. From the present time, water should be afforded only at long intervals, as any undue disturbance, either in the atmosphere or at the root, will not only cause the new growths to break prematurely and thus prevent the flowers from coming to perfection, but it will also damage the constitution of the plants. In placing the plants in houses where the air is moist and warm, they may make sufficient progress without any water being afforded, but it is advisable to examine them every day, in order

that the pseudo-bulbs may be prevented from shrivelling. When the plants are arranged in the warmest house, lightly spray them overhead with tepid, soft water on sunny days till the flowers open. Such *Dendrobiums* as *D. Wardianum*, *D. crassinode*, and all the hybrids which have been obtained from these species, have a tendency to produce new breaks from the base of flowering growths of the current season, as soon as the flower-buds form. Such plants require very careful treatment. Keep them in a moderately dry condition in the cool resting-house, in order that the new growths may remain almost stationary for some time. When the flower-buds are about half-grown, the plants may be afforded more genial treatment, and the flowers will develop vigorously. There are a number of species, as *D. albo-sanguineum*, *D. Bensoniae*, *D. Parishii*, *D. rhodopterygium*, *D. nodatum*, *D. secundum*, *D. crepidatum*, *D. cretaceum*, *D. primum*, *D. crumenatum*, and *D. aduncum*, that should be kept in the Cattleya house during their season of rest, and if their growths are properly matured, they will need but very little water while at rest, but they should be prevented from shrivelling. Plants of *D. Phalenopsis*, *D. bigibbum*, and others of that section which have recently flowered should be treated likewise. *D. Hookerianum*, suspended to the roof of the Cattleya house, has started to push up new breaks, and will now require liberal growing treatment. *D. Falconeri* and the hybrid *D. Venus* should be treated similarly to *D. nobile*, but the plants should not be subjected to severe drying while at rest, as, although such treatment results in abundance of bloom, the after-growths are generally thin and weak. *D. Falconeri giganteum* is probably a natural hybrid between that species and *D. Wardianum*, and it should be afforded such treatment as is suitable for the last-named species. Such evergreen kinds as *D. thyrsiflorum*, *D. densiflorum*, *D. Farmeri*, and *D. sulcatum* should be kept slightly moist at the root while at rest in a cool part of the intermediate house, while *D. chrysotoxum* and *D. suavisimum*, if kept moderately dry at the root, are quite at home in the plant stove the whole year round. Those of the nigro-hirsute section, as *D. Lowianum*, *D. eburneum*, *D. formosum*, *D. cariniferum*, and the rare hybrid *D. formosum-Lowii*, should be kept slightly moist at the root while at rest, and be suspended on the shady side of the East Indian house. The tall-growing sorts, as *D. Dalhousienum* (*pulchellum*), *D. fimbriatum*, *D. f. oculatum*, *D. moschatum*, *D. dioxanthum*, *D. clavatum*, *D. binoculare*, and *D. amethystoglossum* should be placed in the cool, dry house while at rest, but as soon as the flower-spikes have pushed well out from the pseudo-bulbs, the plants may then be taken back to their growing quarters. *D. Dearei* and the new *D. Sanderæ* thrive best in a shady part of the Cattleya house, and should be kept moderately moist at all times.

THE FLOWER GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Hertfordshire.

Spanish Iris.—Bulbs of Spanish Irises may now be planted at any time, in ground that has been deeply dug, and enriched with well-decayed manure. The Spanish Iris is very suitable for planting in clumps in the mixed herbaceous border, where it provides a fine display of flowers early in the season. The blooms of these plants are very suitable for use as cut flowers, their delicate and wide range of colours being much appreciated for indoor decoration. The mixed varieties, which can be obtained very cheaply, are suitable for this purpose. Plant the bulbs moderately closely in rows, on an open border, either in drills or holes made with the dibber.

English Iris.—There is a great resemblance between the English and the Spanish Iris, but the former have larger flowers, and are later in blooming. Like the Spanish Irises, they will succeed in almost any position, but they prefer an open situation. The bulbs must be placed a little further apart than those of the other kind. These also can be obtained as mixed varieties, but for planting in borders it is preferable to use named sorts. A few of the choicer sorts include *Mont Blanc* (white), *Prince Imperial* (bright blue), *Lord Roberts* (dark blue), *Celestial* (sky

blue), Queen Victoria (pale blue), Vulcan (dark purple), Charles Dickens, and Duke of York.

Summer bedding plants.—At the earliest opportunity, if not already done, draw up the scheme for next year's summer bedding, so that it may be known what stocks of the various subjects are required, as the propagation of any particular plants required in great numbers may be commenced. About Christmas time, many decorative plants are removed from the plant-houses, and this will afford opportunity for re-arranging the bedding plants. Rooted cuttings may be removed from the pots or boxes in which they were struck, and potted up singly into large 60-pots. Plants of Heliotrope, Swainsonia, Fuchsia, Streptosolen, and similar subjects, that were rooted in the autumn, and are intended to be trained as standards, must be kept growing steadily, and, if necessary, afforded larger pots. But on no account use larger receptacles than are necessary. Watering must be done with care, and, whilst occasional dampings are beneficial, do not overcharge the atmosphere with moisture, or many of the plants will damp off. Whenever possible, ventilate the frames and houses, if only for a short time in the middle of the day.

General remarks.—The continuous rains have interfered with all outside work, and, on our heavy soil, such work as tree planting and turf-laying has been impossible. Many evergreen shrubs and conifers are benefited by the removal of superfluous branches, and as there is often a demand for evergreens for Christmas decorations, this could be done now. The sparrow is a troublesome and destructive pest in the flower garden, and during dark nights of winter many may be captured in clap-nets. Dense-growing evergreens are favourite roosting-places of this bird, but avoid damaging the bushes when knocking them with the pole. Any other kinds of birds captured in the net should be released.

THE KITCHEN GARDEN.

By JOHN DUNN, Kitchen Garden Foreman,
Royal Gardens, Windsor.

Winter Broccoli.—In consequence of the mildness of the winter, these plants have made soft growth, and they may be expected to suffer injury from the first severe frost. Provision should therefore be made for protecting them during very cold weather. Our practice at Frogmore is to lift as many plants as possible, when the heads have begun to develop, and to plant them in double rows, in a slanting position, care being taken to retain as much of the soil about the roots as possible. Broccoli treated in this manner may be easily protected, whenever frost is imminent, by mats. The mats are raised above the plants on strong string stretched from stout stakes. If further protection is necessary, some dry Fern or litter of any description may be shaken over the mats. Where a limited number of Broccoli plants are grown, they may be lifted and placed in cold frames or other cool structure, where they will be secure from frost.

Winter Spinach.—Decaying leaves should be removed from the plants, and the soil between the rows stirred whenever it is dry enough to allow of the hoe being used. The plants grow better in soil that is broken up and allowed to remain rough than in ground that has been trodden and consolidated. A dusting of soot will be advantageous to the plants, and assist in destroying slugs and other insect pests.

Late Celery.—If the earthing-up of the latest plants is still unfinished, take advantage of the first dry weather to place sufficient soil about the stems to blanch them, and afford protection from frost.

Stored vegetable roots.—Onions that have been stored should be overhauled during wet weather, and any decayed bulbs removed. Spread the remainder as thinly as possible over the floor or shelves, and admit plenty of fresh air during favourable weather. The stock of Potatoes should also be examined, and this will afford opportunity for selecting the "sets" for next year's planting. Seed Potatoes are best stored in some safe place where air can be freely given in mild weather. As many of the early varieties are already commencing to sprout, the sets should be placed in single layers, so that the shoots may develop stout and sturdy—a matter of great importance in early varieties of Potatoes. The

stores of Carrots should also be inspected, and, if any roots are still in the ground, they should be lifted and stored before very cold weather sets in. Parsnips keep best in the ground, and it is only necessary to lift at one time a quantity sufficient for immediate use. During severe frosts, Parsnips still in the ground may be protected with mats or other material. Jerusalem Artichokes can be treated like Parsnips.

Mint.—Further quantities of roots may be placed in heat, and planted either in boxes or in beds of leaves. If a small supply of leaves only is required, boxes will do very well; but where there is a large demand for this herb, it is best forced on a gentle hotbed, covering the roots lightly with soil. Tarragon may be grown in the same manner: very little heat is necessary to force this herb.

Salads.—Radishes should be sown at frequent intervals from this date to maintain a supply of young roots throughout the spring months. A gentle bottom heat, rich soil, and liberal supplies of water are necessary for this crop. Make frequent small sowings of Mustard and Cress in finely-sifted loam and leaf-soil, placed either in boxes or on the bed of a forcing pit.

THE HARDY FRUIT GARDEN.

By A. R. SEARLE, Gardener to the Marquis of NORTHAMPTON, Castle Ashby, Northamptonshire.

Cobnuts and Filberts.—Generally, the pruning of Nut trees is best deferred until the spring, when the male and female flowers are developed. But in the case of neglected bushes that have a mass of unfruitful wood, the work should be undertaken at once. All suckers should be removed entirely and the branches thinned, especially those in the centre of the trees, which should always be kept well open to allow a free access of both sunlight and air. In very bad cases, the bushes should be cut hard back to induce them to form young growths that can be thinned and regulated next season. By this method good, well-balanced heads may be obtained in about three years. When the weather is favourable the ground under the bushes should be cleared of weeds and rubbish, and a little of the surface soil taken away, replacing it with a dressing of good loam and a liberal sprinkling of soot, finishing with a mulch of partially-decayed farm-yard manure. All Nut bushes will be benefited by a similar dressing applied at this season of the year.

General work.—When the weather is fine, clean out the liquid manure tanks and apply the contents to wall trees that have borne heavy crops of fruit: the surface soil should first be loosened lightly with a fork to allow the liquid to reach the roots. Orchard trees may be treated in a similar manner, but the manure water must not be applied at too great a strength. Remove all prunings and other rubbish as the pruning operations proceed and burn them on the garden fire. The ashes will be valuable for various purposes in the garden. When pruning Apple trees, watch for the presence of American blight, and should the least trace of it be found, means should be taken at once to destroy it, as advised in a previous Calendar.

FRUITS UNDER GLASS.

By B. GOODACRE, Gardener to Sir ERNEST CASSELL, G.C.B., Moulton Paddocks, Newmarket.

The orchard-house.—Make preparations for the coming season by giving the house a thorough cleaning, and, if any painting of the woodwork is contemplated, let this be undertaken at once. Before the trees are placed indoors, wash the outside of the pots and soak the soil in them with clear lime-water. If pinching and disbudding were carefully attended to during last season, little pruning will be necessary at this stage. In arranging the trees on the floor or staging, it may be necessary to elevate some of them on pots turned upside down. See that these latter are thoroughly clean, so that everything is in good order, prior to starting the trees into growth. The time to commence forcing will depend upon the date at which ripe fruits are required, but in any case it is better to commence in good time, so that the trees may be allowed to develop steadily. Use fire-heat sparingly: a temperature of 40° to 45° with a rise of 5° during the daytime will suffice until the flowers open,

when the temperature may be raised another 5°. Syringe the branches freely on bright days, and close the ventilators early in the day to allow the temperature to increase about 10° by sun-heat. At other times, maintain a moist atmosphere by damping the paths and stagings as may be necessary. Admit air freely during mild weather, and endeavour to change the atmosphere of the house daily. During inclement weather this may be done by allowing extra fire-heat, sufficient to raise the temperature about 5°. At the same time open the upper ventilators slightly, preferably about noon, for an hour or so. If the house is a span-roof structure, open the ventilators on the side that is sheltered from the wind.

The early Peach-house.—When the flowers on the earliest Peach trees are expanded, raise the temperature 5°, and maintain a fairly dry, buoyant atmosphere. Great care will be necessary to ensure the fruits setting, and the pollination of the blooms must be carefully attended to. A rabbit's tail attached to a pliable wire will serve for dusting the flowers, but particular care should be taken to see that the fur is dry and clean before it is used. Do not drag the tail across the blooms, but lightly dab each flower that is open. The temperature of the house may be raised to 55° at night, with a proportionate increase by day. High temperatures must not be permitted until January is well advanced, as growth will be slow until the days lengthen. Even in the case of the very earliest houses, it is safer to afford a minimum warmth of 55° or 60° until growth is fairly well advanced. The temperature may be increased gradually as the days lengthen, but hard forcing should not be practised until stoning is completed. In the case of later Peach-houses, less care is necessary to ensure a good crop, as growth takes place under more natural conditions.

Succession Peach-house.—The trees may now be started according to the directions given in a previous Calendar in the case of the early Peach-house.

Late Peach-house.—Push on with the work of pruning and cleansing of the trees as fast as possible, so that the ventilators may be thrown open and the trees rested thoroughly for a few weeks before being started. The trees may be allowed to break into growth naturally, only employing fire-heat to ward off frost. See that the roots of all trees are well supplied with moisture, particularly those in the neighbourhood of the hot-water pipes.

THE APIARY.

By CHLORIS.

The visiting bee expert.—I find there is a growing dislike among ignorant beekeepers to the visits of experts. This is unfortunate, because visits among this class are most needed. It is from the hives of the careless and ignorant that contagion spreads. The complaint by these people is that the travelling expert carries disease to healthy hives. Sometimes a beekeeper says that before the visit of the expert he had a clean bill of health. On further questioning the grumbler, one finds that his hives have never been carefully overhauled, and that disease was not discovered until one or more colonies had perished. Further, they have no idea whether hives within a reasonable distance are infected. At the present time, none of us can speak with absolute certainty on every matter concerning the management of apiaries. If the expert tells of his own experience exactly, and expresses a doubt in his advice, he is put down as one who does not know his work. What is the consequence? The expert only speaks of those things about which there can be no uncertainty, and further advice is withheld. Another complaint one hears is that the expert calls at the wrong time. The season during which inspection can take place is a very short one, and, when it is borne in mind that one man has often a whole county to inspect during that period, it is evident that some apiaries must be visited at awkward times. The last expert I met had been out four months, visiting apiaries every day for six days a week, and had cycled about 150 miles per week in order to traverse one of the largest counties. He was very discouraged and disappointed with the result of his visits. Disease was too frequent, and beekeepers showed little disposition to accept advice.

EDITORIAL NOTICE

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, as well as specimens of plants for naming, should be addressed to the EDITORS, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

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AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich—38.8°.

ACTUAL TEMPERATURES.—

LONDON.—Wednesday, December 21 (6 P.M.): Max. 51°; Min. 49°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, December 22 (10 A.M.): Bar. 30.3; Temp. 43°; Weather—Foggy.

PROVINCES.—Wednesday, December 21: Max. 49° Cambridge; Min. 42° Yorkshire.

Christmas Trees.

The Christmas tree as an institution will surely survive as long as children are young. Originally a German invention, the Christmas tree is stated by some to have been introduced into this country by the German colony in Manchester; though it is said by others that Prince Albert, Consort of Queen Victoria, who brought us much that is good from Germany, gave England her first Christmas tree. It required no acclimatisation. Like so many introduced plants, it at once struck its roots deep and wide, and now flourishes—sometimes without roots—wherever it finds the congenial environment of a happy household. Not only does it flourish in these surroundings, but it bears more surprising fruit than any other member of the vegetable kingdom. Illumined by many a candle and bearing its whimsical burden of presents, with here and there a hint of woolly snow to remind those who join hands round it of the rigours of the weather outside, the Christmas tree is the worthy representative of Father Christmas himself. Nor is it only in the countries of its origin and of its first adoption that the Christmas tree finds a welcome home. For, according to the *Journal of the Society of Arts*, which recently made a detailed study of the subject, the United States of America has given the Christmas tree a wide and enthusiastic welcome within its hospitable borders. So much so, that, year by year, four million Christmas trees twinkle with jolly light in as many American homes. But, whereas, in England, and, if we mistake not, in Germany also, the Christmas tree is generally the same species, in America it is the most variable of plants, and, curiously enough, becomes indistinguishable from that kind of evergreen tree which flourishes in a particular neighbourhood. If he can have it so, the American's Christmas tree is a Fir; failing that, it is a Spruce. In New York and Phila-

delphia it often becomes a Black Spruce, sometimes a Norway Spruce, and, occasionally, a Cedar or a Lodge Pole Pine. But in whatever guise it appears, the Christmas tree is always evergreen, and so bears throughout the cold of winter the promise of return of spring. In America, moreover, as in this country, the Christmas tree is not only variable as to type, but also as to size. In modest households it may grow no more than 5 feet high; in the homes of the wealthy it has been known to tower full 30 feet and more. But symbols are not measured by size, and the only estimate of the worth of a Christmas tree is the number of children it makes happy and the number of "grown ups" it makes kind. According to the authority we have quoted, the prosaic eye of the United States Department of Agriculture is directed somewhat coldly on the Christmas tree. The Department holds it guilty of assisting in the depletion of the timber supply. It fears that, if we have more Christmas trees, we shall have fewer newspapers, for there will be less wood pulp available. If we had any fear that, by its action, the number of Christmas trees would be reduced, we should demand—were we Americans—a Referendum on the question, and make every child a plural voter—for every year below 10, a vote. But the Agricultural Department does not really wish to check the spread of Christmas trees; it wants, instead of seedlings, the tops of felled trees to be used. Suppose, however, the fraud were discovered! Suppose—a terrible thought!—that the tree, borne down by its heavy, string-tied fruit and the weight of snow upon it, were to topple over and show that it was only a branch, and not a tree at all! The United States Department of Agriculture would not like that. No; it must teach us wisdom on 364 days—we will not listen on the remaining one.

The British Christmas trees are for the most part of alien origin, and come to us from Norwegian forests; but native-grown are to be had by those who look with disapproval on alien immigration. Just as the trees of our countryside are of more modest dimensions, though not a whit less shapely, than those of North America, so the Christmas tree in London rarely attains to the dimensions reached by that of New York or Chicago. On the other hand, even the most ambitious millionaires in Broadway cannot produce more beautifully symmetrical or truly spruce Christmas trees than British children may receive from our nurseries for theirs. But the nursery-grown tree has one drawback: it is less easily moved than its more adventurous Norwegian relative. Unless three or four half-crowns are forthcoming, a 5-foot high, nursery-grown Christmas tree, of the most perfect form, refuses to change its place; whereas, for one of those sumptuous coins, the Norway Spruce of equal size will exchange its quarters in the chilly northern forest for a home in the humblest household here. As to the age of Christmas trees we refuse to be inquisitive; nor do we care how many may be grown to the acre; what profit the vendors receive does not interest us just now; what does interest us is to know that in New York and New England States the Christmas tree grows densest. At Christmas time they are to be met with there to the extent of 1½ million, and great or small, Spruce or Fir, each gives perfect happiness.

INTERNATIONAL CONFERENCE ON GENETICS.

—In accordance with the decision arrived at during the Conference in London, 1906, the next International Conference on Genetics will be held in Paris on September 18-23, 1911. Just as the London conference was held under the auspices of the Royal Horticultural Society, so the Paris conference will take place under the auspices and in the rooms of the Société Nationale d'Horticulture de France. The president of the 1911 conference will be Professor IVES DELAGE, Member of the Institute, and one of the most distinguished French biologists. Dr. VIGER, President of the National Horticultural Society of France, has undertaken to preside over the Organisation Committee, which includes the names of the most prominent French horticulturists, and of which Mr. PHILIPPE L. DE VILMORIN is secretary, and Mr. A. A. MEUNISSIER, assistant-secretary. The member's subscription, which should be sent to Mr. P. DE VILMORIN, 66, Rue Boissière, Paris, is £1; honorary member's subscription, £4; and the benefactor's subscription, £20. It is to be hoped that British horticulturists will attend the Conference in large numbers. All correspondence should be addressed to the secretary at the address given above.

LA SOCIÉTÉ FRANÇAISE D'HORTICULTURE DE LONDRES.

—The annual dinner will be held on Saturday, January 21, at the Café Royal, 68, Regent Street. Mr. PHILIPPE DE VILMORIN, who was to have occupied the chair on the last occasion but was prevented by the Paris floods, will preside. The President, Mr. G. SCHNEIDER, 17, Ifield Road, Fulham Road, S.W., will be pleased to hear from those intending to be present.

KINGSTON AGRICULTURAL COLLEGE.

—Dr. W. GOODWIN, M.Sc., Head of the Chemical Department at the South-Eastern Agricultural College, Wye, has been appointed Principal of the Midland Agricultural College, Kingston, Derbyshire.

ROSE PROFESSOR C. S. SARGENT.

—Respecting this new Rose, which formed the subject of our Supplementary Illustration on November 12, we observe from a note in *Horticulture* (America) that, on account of the existence of another Rose of that name, the title of the new one has been changed to "The Sargent Rose."

SUGAR BEET IN NORFOLK.

—Mr. WALTER E. SAWYER, who superintended during the present year the commercial experiment of growing Sugar Beet for export, gives an interesting account of his experience in the *Journal of the Board of Agriculture* (December, 1910). The trials were made on 53 acres of land in Norfolk, and sufficed to satisfy the farmers that they can grow Sugar Beet of as good quality as can be raised in Europe, and that in favourable seasons they may expect a yield greater than the European average. But when the commercial results are added up, it appears that the growing for export is not a financial success. Lifting and carting so eat into the profits that many of the farmers found themselves out of pocket. On the basis of this testimony it would, therefore, seem essential, if Sugar Beet is to be cultivated profitably in this country, that, as we have insisted in these columns, factories should be established in the neighbourhood of the ground under the crop, for in this way only can the cost of carriage be reduced; moreover, cheap by-products, Beet-slices and saturated lime, are then at the disposal of the farmer. We should like to see the investigation of the problem of Sugar Beet cultivation in this country entrusted by, let us say, the Development Commissioners, to some competent man or men, it being laid down as a condition that a careful study of methods, and particularly of machinery, should precede the actual experimentation.



FIG. 209.—BRASSIA FORGETIANA: FLOWERS WHITISH WITH CHOCOLATE-PURPLE MARKINGS.
(See p. 463.)

INDIAN FRUITS.—We are indebted to Mr. T. H. STOREY, Superintendent of Sajjan Niwas Gardens, Udaipur, India, for the photograph of tropical fruits reproduced in fig. 210. The specimens were gathered in the gardens at Sajjan Niwas, and include two examples of the Jack-Fruit (*Artocarpus integrifolia*), which is very nearly related to the Bread-fruit. Mr. STOREY informs us that the Jack-fruit is largely used by the natives for making pickles, being much appreciated by them for that purpose. When the fruits are ripe they possess rather a strong smell, which is anything but pleasant. The large Mangos in the centre of the picture are gathered from grafted trees, whilst the two groups of smaller Mangos nearer the foreground are gathered from wild trees. The Mango also is much appreciated as a conserve, and is largely employed in the making of chutney. Ripe Mangos are a great delicacy, and by many regarded as the best of all tropical fruits. The Grapes are of the well-known variety, Duke of Buccleuch, and are apparently fairly good bunches. The Bananas, or Plantains as they are known in the East, and Jamans (*Eugenia jambolana*) complete the collection.

FLOWERS IN SEASON.—Mr. R. W. NORMAN, Heligan Gardens, St. Austell, Cornwall, sends flowering shoots of *Eucalyptus cordata* cut from a tree growing out-of-doors. A flowering shoot of this species formed the subject of the Supplementary Illustration in the issue for March 12, 1910, the specimen being furnished us from Mr. A. J. MORGAN's garden at Porthgidden, Cornwall. Although this *Eucalyptus* survives the winter in the open in the south-west, it is doubtful whether the plant would stand the cold in most places; some discussion took place on this subject in our issue for December 19, 1909. Mr. NORMAN writes:—"The fine tree of *Eucalyptus cordata* in these gardens has, owing to the heavy gales of Wednesday, 7th inst., been greatly reduced in size; this is a great loss to us, for the tree was of great beauty and flowered invariably at this season of the year. But its greatest charm is when the young leaves and growths are developing, contrasting finely with the deeper metallic hue of the older leaves. The tree is situated in a sheltered dell, and does not get injured by the little frost we experience here." With the *Eucalyptus* from Heligan Gardens came exceptionally well-fruited shoots of *Cornus capitata* (syn. *Benthania fragifera*) (see illustration in *Gard. Chron.*, February 6, 1909, p. 82, fig. 43). "The shoots of *Benthania fragifera* show how beautiful the tree is when in fruit. It was on this estate that the species first flowered and fruited in this country, and it still continues to do so regularly. Seedlings appear most freely among the fallen leaves along the sides of the carriage drives here."

THE APPOINTMENT OF A HEAD GARDENER.—It will interest our readers to know the method employed in the selection of a head gardener for the grounds of the Natural History Museum, in Paris. Although this famous institution is under the control of the State, neither the Chambre nor the Senate undertook to divine which of the candidates was most suitable for the post. Nor did it occur to the authorities to invite applications from ranks other than those of horticulture. Strange as it may seem to Londoners, the appointment was confided to a committee of experts. Practical gardeners (for example, the head gardener to the town of Paris), and horticulturists of world-wide repute, like Mr. MAURICE DE VILMORIN, were also placed on the committee, and even the experience of the Director of the National School of Horticulture, at Versailles, was utilised in the same manner. The procedure which followed would doubtless appear yet more

droll to those who are responsible for the methods employed in similar appointments by, let us say, the London County Council. The Appointments Committee actually proceeded to determine by definite tests the horticultural knowledge of the several candidates. They asked them "what scheme of floral decoration they would advise for the Museum grounds"; they required them to name no fewer than 20 plants, the cultivation of which the successful candidate would be required to supervise; and they even demanded practical evidence that the candidates knew what grafting and budding meant." All this for a horticultural post! Who now can say that "they order these things better in France," when, as the outcome of such fantastic procedure, an experienced horticulturist, Mr. BONYER, received the appointment, and particularly when it is remembered that a similar method of appointment would undoubtedly be adopted were it a question of electing a man to undertake the supervision of the parks and open-spaces of Paris itself.

A CHAIR OF TROPICAL ENTOMOLOGY.—The movement set on foot by the Liverpool School of Tropical Medicine, says the *Times*, in commemoration of the work of Dr. J. E. DUTTON, who lost his life on the Congo through contracting spirillum fever whilst on the Twelfth Research Expedition of the School in 1905, has now been completed. The school has offered Liverpool University the sum of £10,000 for the establishment of a Chair in Tropical Entomology. At a meeting of the Council of the University it was resolved gratefully to accept the offer. This, it is believed, will be the only Professorship in Tropical Entomology in any University in the world. It is the second Chair given to the University by the Liverpool School, the first being the Sir Alfred Jones Chair in Tropical Medicine.

ARTIFICIAL MANURES FOR TREE-NURSERIES.—In the provision of a suitable soil to serve as seed bed and nursery for trees, the intelligent and cautious use of artificial manures should not be overlooked. In the course of an interesting and strikingly illustrated article in *Die Gartenwelt* (xiv., 47), Dr. BREHMER, of Altona, summarises the results of experiments made in the artificial manuring of young tree-plantations. Where animal manure is costly, the best plan to adopt is to clear the land intended for the nursery, and after manuring with lime, potash manures (Kainit) and phosphates to take a crop of Lupins, which is ploughed or dug in. If this course cannot be adopted, the soil, if it is deficient in one or other of lime, potash and phosphates, should be supplied with these food-materials. Lime is best applied in the form of a mixture of chalk and quicklime, taking care that the quicklime is not in such quantity as to burn the roots. The rate recommended (chalk and lime) is about half-a-hundred-weight to the acre. Potash may be applied in autumn in the form of Kainit (14 lbs. to 100 square yards), and phosphates more sparingly, say, 10 lbs. to the 100 square yards. With respect to nitrogenous manures, if green manure has been added, none will be needed for some time. But if the soil is poor in humus, it is advisable to add nitrogen in the shape of slow-acting materials such as horn and hoof scrapings or dried blood. Quick-acting nitrogenous artificial manures such as nitrate of soda or sulphate of ammonia must be applied with caution, otherwise burning of the roots and non-ripening of the wood result. Of the two, sulphate of ammonia applied as a light dressing in late autumn is to be preferred.

PUBLICATIONS RECEIVED.—*The Journal of Agriculture*. December, 1910. (London: R. Clay & Sons.) Price 4d.—*Reports of the Experiment Farms for the year ending March*

18, 1910. (Ottawa: C. H. Parmelee.)—*Virginia Truck Experiment Station, Norfolk, Virginia*. Bulletins; Truck Crop Investigations: The Control of Malnutrition Diseases, by L. L. Harter. Some Insects Injurious to Cabbage, Cucumbers, and Related Crops, by F. H. Chittenden. Some Seed Potato Questions in 1909, by T. C. Johnson. Spinach Troubles at Norfolk; and the Improvement of Trucking Soils, by L. L. Harter. United States Department of Agriculture, Bureau of Plant Industry.—*Vinton's Agricultural Almanac and Diary*, 1911. (London: Vinton & Co.) Price 1s.—*The Families, Genera and Species of Pteridophyta of the Transvaal*, by Joseph Burt-Davy, F.L.S., and Vicary Gibbs Crawley, B.A. (Cape Town: S.A. Association for the Advancement of Science.)—*The Queensland Agricultural Journal*, November, 1910. (Brisbane: Anthony James Cumming.)—*The Transvaal Agricultural Journal*, October, 1910. (Pretoria: Government Printing and Stationery Office.)—*Gardening Year Book and Garden Oracle*, 1911, by George Gordon, V.M.H. (London: W. H. and L. Collingridge.) Price 1s.—*Journal of the Royal Horticultural Society*, edited by F. J. Chittenden, F.L.S. (London: Spottiswoode & Co., Ltd.) Price 6s.

FOREIGN CORRESPONDENCE.

DEVELOPMENT OF THE BANANA INDUSTRY IN THE CANARY ISLANDS.

THERE is a tradition that Bananas were first introduced into the Canaries, or Fortunate Islands, from the Gulf of Guinea on the west coast of Africa. It remains, however, to be shown how they got there from the Far East, their true home. They were taken to Santo Domingo from Grand Canary in 1516, and from there to the other West Indian Islands and Central America.

Oviedo, who wrote on the natural history of the West Indies, saw Banana plants in the orchard of a monastery at Las Palmas in 1520. The botanist Martiniere, who accompanied Lapeyrouse in his celebrated voyage, sent from the Canaries to the Minister of Marine of France two cords that he had made out of the bark of the Banana tree, copying, no doubt, what local peasants had done long before him. He prophesied that there would be a great future for this plant as a textile.

Oddly enough, Bananas are known in the Canaries and Central America by the Spanish word Plátano, a most unfortunate corruption of the original and appropriate name, namely, Plántano (plantain in English), which has now become obsolete. The botanical name of the Banana, *Musa sapientum*, was given in the old belief that it was the fruit of the tree of knowledge of good and evil.

Of the many species which have long been known in the Canaries, the Banana that has survived for the special purpose of the trade with Europe is the Chinese Banana (*Musa Cavendishii*), the least tropical and therefore the most suitable for cool climates. Its cultivation is now at the height of its prosperity, and good irrigated land near the coast commands the almost fabulous rent of £40 per English acre. So far as I am aware, there is no part of the world where the price of land for agricultural or horticultural purposes attains anything like this figure. The other day a small plantation of 10 acres was let to an English firm exporting Bananas, and the total rent stipulated for that period was £450 sterling or £45 per acre.

The part of the Canary Islands where most of the Bananas are cultivated is the well-known Valley of Orotava, owing to the comparatively abundant and never-failing supply of water, which, no doubt, filters down from the high and extensive plateau of the Canadas, nearly 7,000 feet high, and surrounding the famous peak of Tenerife, which is over 12,000 feet. During the

winter months there are abundant rains and snow, and the water gradually percolates to the region of the coast, where it is tapped by long, horizontal tunnels; in one case the tunnel is over a mile in length, and, although it does not rain for six months (May to October) the several water galleries show very little difference in their supply summer or winter. In one of these tunnels the output is three million gallons daily, and this water is carried along an aqueduct for a great distance to irrigate the land lying below it. In another instance a large supply of water (about one million gallons daily) that formerly ran to waste into the sea, falling from the cliff where it first made its appearance, has been pumped up nearly 1,000 feet high by steam, at a cost of over £40,000. It is then conducted by an aqueduct across the Valley of Orotava from W. to E., a distance of six miles.

It is owing to these circumstances and to the favourable geographical position of the Canaries for navigation and cheap freights that such developments have occurred in the Banana trade. A further increase of plantations will certainly take place, at any rate in the neighbourhood of the Valley of Orotava, when more water is procured, and this will undoubtedly be the case, as several new tunnels are being bored in search of water with very good prospects of success. There still remain large supplies going to waste at the coast, where they first appear, as in the previously named instance, and these await the necessary enterprise to have the water pumped up and made available to irrigate land which still remains unplanted with Bananas, for which crop an abundance of water is an absolute necessity. The irrigation of land in this country makes an enormous increase in its value, for even if it is planted with ordinary crops, such as Potatoes or Tomatoes, the proprietor can get three such crops instead of a single crop each year, to say nothing of the enormous profits made from the cultivation of Bananas which are unequalled by any known crop. *George V. Perez, Puerto Orotava, Teneriffe.*

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

HARDY FRUIT EXHIBITIONS.—The primary lesson for hardy fruit growers to learn from the recent Colonial Fruit Show is the potency of quantity in producing striking exhibition effects. That the British Columbian Government should have concentrated its efforts to create such a wonderful display of Apples from its highly-favoured country showed how well its energies were directed. Never in Britain has there been presented as a single exhibit at a show such a marvellous collection of Apples. It dominated all else in the show, and it left little else of note or interest. The British Columbian Government has millions of acres of good land it wishes to see settled and planted. No such conditions exist at home, as our Government has no land to sell. Having here the greatest market in the world at our own doors, and not, as from the Pacific coast, thousands of miles distant, our growers may, if they wish, through the aid of their organisations, do all that is possible in promoting fruit culture and sale without Government interference. But we seem incapable of acting on the lesson the Colonial Government provided for us. We show individual varieties in baskets or dishes in a conglomerate form, no one variety creating striking effects. The Columbian Government, realising the grand effects to be obtained from colour, massed their Spitzenbergs or Jonathans or King of Tompkins County Apples, or used their bright yellow-golden Pippins with striking effect. They are evidently artists in colours. Whatever may have been the merits of the Apples which these brilliantly hued skins enclosed, certainly the eye was both arrested and fascinated by them. Of course it will be pleaded that our fickle climate

does not develop colour. That is not true. Those who would grow for colour may find Spitzenberg fairly rivalled by Red Victoria, and Worcester Pearmain, Duchess's Favourite, Baumann's Reinette, Gascoyne's Scarlet Seedling, Ben's Red, and some others even in this country run the reddest of Columbians hard for colour. But whatever may be the market value of colour, it does seem that, in home-grown fruit, the best cooking or table quality is to be looked for in the more pallid or russety fruits rather than in those aglow with colour. Could we induce some of the greatest of Apple-producing counties, such as Kent, Sussex, Surrey, Hampshire, Berkshire, Essex, Middlesex, Worcester, and Hereford, to enter into a competition, county against county, by staging at the Royal Horticultural Hall collections of say 500 specially-prescribed baskets, there being not more than 100 varieties and not fewer than 50 in each collection, then we should see a display of home-grown Apples which would resemble in its effect the effort made by the Columbian Government. Cannot the British Fruit-growers' Association, with the co-operation of the Royal Horticultural Society, organise something in this way? Every good grower in a county should be required to send so many baskets with his name attached to them. But each collection should be dealt with as that of a county, and a great honour indeed would attach to that county which had the finest collection. The public, the Press, and the myriads of Apple consumers then would be able to see what Old England is capable of doing in home fruit production. *A. D.*

THE RED-BERRIED MISTLETO.—Considering how popular our native Mistleto is with most people, it is strange that the red-berried Mistleto is so rare that very few people have heard of it. *Viscum cruciatum* is parasitic on the Olive, and is found in such widely-separated places as Spain, Syria, and North-east Africa. Some little while ago I was reading in an account of a journey from Cape to Cairo of a red-berried Mistleto being seen in great profusion in a tract of country north of the Transvaal. Beyond this bald statement no particulars were given, and it would be futile to make guesses at its identity or that of the host plant, for it may prove to have been "an error of observation" on the part of the writer, who apparently had barely a smattering of botanical or horticultural knowledge. Whilst at Little Petherick, near Padstow, Mr. Athelstan Riley had a very fine red-berried Mistleto luxuriating on a standard Thorn, which grew in a large flower pot. When Mr. Riley left Cornwall for Jersey he gave the plant to Mrs. Ford, and I had it fetched to Pencarrow, Cornwall, but by that time the Mistleto had nearly killed the Thorn, and although the parasite was heavily berried and healthy, its host showed unmistakable signs of decay. Last spring the Thorn died, and this event was soon followed by the death of the Mistleto, but I had previously "sowed" some seeds on such plants as Thorns, seedling Apples, and the Paradise Apple stock. These seeds nearly all germinated and promised to do well. I found that I was most successful when the host plants were kept in a shady and moist corner of an intermediate-house. The Mistleto berries were very large, and, when fresh, bright, shining red in colour; the flowers, which appear while the berries are still plump, were red-tipped, thus making the plant very bright and attractive. This Mistleto is not hardy; it should be grown out-of-doors during the summer and brought into a warm house on the approach of cold weather. *A. C. Bartlett.*

SAXIFRAGA LANTOSCA.—It turns out that I made a mistake in my penultimate letter. I thought I had not any plant or form of *S. lantoscana* from M. Correvon. My manager, however, points out that I did purchase some plants three or four years ago, and that he was filled with such doubts in regard to them that he had them all labelled as coming from M. Correvon under the name of *S. lantoscana*. He was perfectly right, and so is Mr. Robinson; that plant is no more *lantoscana* than it is *florulenta* or *Bursleriana*. It is an obvious secondary *Aizoon*, very close to *S. Churchillii*. I shall be glad to send him a piece of this doubtful *lantoscana*, and at the same time to state that plant came from his garden under the name of

lantoscana. Of course, it is clear what happened: the owner of a nursery, be he never so great a botanist, cannot personally supervise the sending of every plant that is ordered. And his underlings are occasionally liable, being human, to error. And thus, even from so authoritative a source as *Floraire* (to say nothing of the Craven Nursery) a plant may sometimes get into general cultivation under a name to which it has no shadow of a right. The plants are in the same frame here as the genuine specimens from the Gorge of the Vésubie—the contrast is terrible. *Reginald Farrer.*

APPLE MILLER'S SEEDLING.—I was pleased to read in the report of the Wye Fruit Congress (see p. 436) the remarks concerning this Apple. It is a variety which deserves to be better known, and one which I had several times wished to bring before your notice. My acquaintance with it extends over a period of four years. I have found it a regular and heavy cropper, and each year it has proved its value as a market Apple, for the returns have always exceeded those anticipated. Last season the trees were laden with fruits, and they are now covered with fruit buds. Grown on a light, well-cultivated soil, the light, straw-coloured appearance of the fruit makes it as pleasing to the eye as Worcester Pearmain, a variety which Miller's Seedling will eventually supersede for market purposes, chiefly owing to its flavour, which is piquant, juicy, crisp, and in marked contrast with the tough and flavourless qualities of Worcester Pearmain. Another point of interest in the report is the remark that Stirling Castle must be grown on the Crab stock; this cannot be too strongly emphasised. From practical experience, I know this to be true, for if the crop is not so heavy, the fruits are cleaner, larger, and by far more valuable than those from trees worked on the Paradise stocks; moreover, the trees grow cleaner, they are freer from canker, and live long. *H. R.*

POISONS AND PHARMACY ACT, 1908.—On the 14th inst. a doubtful point in connection with the above Act was settled by the judges in the Divisional Court. Their decision was as follows:—Under the Act of 1868, only a qualified pharmacist could sell poisons, and not an unqualified assistant, and it therefore followed that, under the amended Act of 1908, only a person licensed by the local authorities could sell poisonous compounds for horticulture and agriculture. Managers and assistants were not entitled to sell unless they held a separate licence. It is to be hoped that nurserymen and seedsmen holding licences under this Act will now take special warning from this decision, and take care that their assistants conform to the requirements of the Act. It is quite clear that all the representatives of the Pharmaceutical Society who have been able to make purchases were strangers to the employees who sold them, and, if only known persons had been supplied, none of these vexatious prosecutions would have arisen. I am sorry to say that, only within the last 10 days, several agents have been threatened with penalties for not affixing their name and address on the bottles, and in these cases also the purchasers were strangers, and should not have been supplied for this reason. The "Traders in Poisons Society" intend to approach His Majesty's Privy Council asking for greater facilities for obtaining licences and at less expense, so that assistants can obtain licences to sell (under the head licensee) at a nominal charge. *G. H. Richards.*

MONTBRETIAS.—I make it a rule to lift these plants each year directly the growing season is finished, replanting them 4 inches apart and afterwards giving a slight mulch. Mr. Beckett states (p. 432) that his plants were once killed through leaving them in the ground during the winter. I presume the cold must have been very severe, as in November of last year our entire stock was replanted, when frost set in for a week, but although there were 19° of frost no harm resulted. Contrary to the experience of Sir Herbert Maxwell, I find here that Montbretias planted in the grass become crowded at the roots if left undisturbed for more than two years, producing a number of small bulbs, and consequently weakly foliage with scarcely any flower-spikes that cannot be compared with those produced by plants which have been transplanted bi-annually. *J. Smith, Mulroy, Co. Donegal.*

THE BLACK CURRANT IN AN EXPOSED GARDEN.—There are some good bushes of Black Currant in a very exposed garden on this island. Some of the plants are rather old and have been severely thinned by pruning during recent years. The young growths are remarkably strong and healthy, and show promise of a good crop of fruit. These are growing in a garden quite open to the sea, with no protection from the heavy gales which are experienced here. The soil is a dark vegetable loam. The plot has been under cultivation many years, and was formerly allotted to the coastguards, who were stationed here until a few years ago. Most of the Brassicas, and Parsnips, Beet, and Celery are grown successfully. Onions and Carrots are not so satisfactory. Nursery beds of Quick "Whitethorn" are fairly strong. The same may be said in respect to Sycamore and the Mountain Ash; but the Sweet Chestnut and Birch are almost failures. The common Elder loses the tips of the young shoots; while the Sea Buckthorn grows very slowly. The island lies in N. lat. 53° 29', W. long 6° 1'. *C. Ruse, Lambay Island, Rush, Co. Dublin.*

SOCIETIES.

ROYAL HORTICULTURAL.

DECEMBER 20.—The Floral, Fruit and Vegetable, and Orchid Committees of this Society met in the Vincent Square Hall on Tuesday last merely for the inspection of novelties—other exhibits than these were not invited. The ORCHID COMMITTEE found a moderate number of exhibits to adjudicate upon, but the members of the FLORAL and FRUIT COMMITTEES had scarcely sufficient work to justify their attendance.

Floral Committee.

Present: Henry B. May, Esq. (in the Chair); and Messrs. James Walker, T. W. Turner, G. Reuthe, George Gordon, James Hudson, W. Howe, J. F. McLeod, Chas. Dixon, J. W. Barr, H. J. Cutbush, J. T. Bennett-Poë, W. P. Thompson, E. H. Jenkins, A. Kingsmill, E. A. Bowles, and R. Hooper Pearson.

The exhibits before this Committee included a variety of *Primula sinensis* with variegated foliage, a crimson-scarlet *Hippeastrum* and a vase of blooms of the pale-yellow single-flowered *Chrysanthemum* "Peter Barnes."

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the Chair); and Messrs. Jas. O'Brien (hon. sec.), A. Dye, Henry Little, J. Charlesworth, C. H. Curtis, F. J. Hanbury, A. A. McBean, W. Cobb, W. H. Hatcher, H. G. Alexander, W. H. White, Gurney Wilson, de B. Crawshay, and Harry J. Veitch.

Twenty-four plants were submitted to the Committee for awards, one First-class Certificate, four Awards of Merit, and one Cultural Commendation being granted.

Lieut.-Col. Sir GEORGE L. HOLFORD, K.C.V.O., Westonbirt (gr. Mr. H. G. Alexander), showed four fine hybrids, two of which received awards. The others were *Cypripedium Actæus* var. *Undine* (insigne *Sanderæ* × *Leeanum Prospero*), with fine yellow flower, three-fourths of the dorsal sepal being pure white (the plant carried nine flowers), and *C. Rossettii* magnificum, the finest variety of this handsome yellow and white-flowered *Cypripedium* yet shown.

SAMUEL LARKIN, Esq., The Ridgeway, Halesmere (gr. Mr. Hale), showed a good white variety of *Miltonia Bleuana*, a fine plant of *Odontoglossum crispum-Harryanum*, and a light flowered variety of *Lælio-Cattleya Bella*.



FRUITS GROWN IN SAJJAN NIWAS GARDENS, UDAIPUR, INDIA.

FIG. 210.—THE LARGE SPECIMENS ARE JACK-FRUITS (*ARTOCARPUS INTEGRIFOLIA*); IN THE CENTRE ARE MANGOS (*MANGIFERA INDICA*), WITH BANANAS AND GRAPES; AND, IN THE FOREGROUND, JAMANS (*EUGENIA JAMBOLANA*).

(See p. 473.)

PANTIA RALLI, Esq., Ashted Park (gr. Mr. Hunt), exhibited a good white form of *Cattleya Dusseldorfei* Undine.

R. G. THWAITES, Esq., Streatham (gr. Mr. J. M. Black), showed *Sophracattleya Saxa* and a fine variety of his white-petalled *Cattleya* Maggie Raphael.

FRANCIS WELLESLEY, Esq., Westfield, Woking (gr. Mr. Hopkins), displayed *Cypripedium Waterloo*, *C. etoniense*, and *Lælio-Cattleya Ophir* "Westfield variety," having pretty, canary-yellow flowers with rose colour on the lip.

Messrs. CHARLESWORTH & Co., Haywards Heath, showed *Cypripedium Victor Hugo* (variable \times *Lathamianum*), a fine hybrid with large, white dorsal sepal, marked with a purplish band through the centre; a grand plant of *Lælio-Cattleya Sunray* (*L. cinnabarina* \times *C. superba splendens*), and two others, which received awards.

Messrs. J. & A. A. McBEAN, Cooksbridge, showed *Sophracattleya Doris*, having rich scarlet flowers $4\frac{1}{2}$ inches across.

Messrs. ARMSTRONG & BROWN, Tunbridge Wells, showed four interesting *Cypripedium* Fairrieum crosses, viz., *C. Dauphine* (\times *Cassandra* \times *Fairrieum*), *C. Ambryna* (*Goultenianum* \times *Fairrieum*), *C. Corona* (*Leeanum* \times *Fairrieum*), and *C. Bayonne* (*Prewettii* \times *Fairrieum*).

A. HARRISON, Esq., Lyndhurst, Watford, exhibited *Lælio-Cattleya Ethelreda* Harrison, a small-flowered but distinct hybrid.

Messrs. JAS. VEITCH & SONS, Royal Exotic Nursery, King's Road, Chelsea, showed *Cypripedium Clonia* (*Actæus* \times *insigne* *Harefield* Hall), a fine variety showing the influence of *C. insigne* *Harefield* Hall in a marked degree; *C. insigne* *Crusader* (*insigne* *Sanderæ* \times *Harefield* Hall), a large and finely-formed flower, with even purple spotting on the dorsal sepal; and *C. Gertrude* (*glaucochrysum* \times *Euryades*), which will be a pretty flower when matured.

F. J. HANBURY, Esq., showed a flower of a cross between *Lælia autumnalis* and *Cattleya labiata*.

AWARDS.

FIRST-CLASS CERTIFICATE.

Cypripedium Ceres magnificum (*Rossii rubescens* \times *Rolfæ*), from Messrs. CHARLESWORTH & Co., Haywards Heath.—The finest variety of this pretty hybrid yet shown. The large flowers partake strongly of *O. Rossii rubescens* in the fine claret-red bars on the sepals and petals, the tips of the latter being tinged with rose, like the broad, ovate labellum. The column is purple-coloured.

AWARDS OF MERIT.

Lælio-Cattleya Pauline (*L.-C. Ophir* \times *C. labiata alba*), from Lieut.-Col. Sir GEORGE L. HOLFORD, K.C.V.O. (gr. Mr. H. G. Alexander).—A distinct hybrid, with flowers as large as those of *C. labiata*. The sepals and petals are white, tinged with canary yellow: the lip has a yellow-coloured disc and rose-purple veining.

Cypripedium Dante rotundiflorum (*Euryades* \times *Charlesworthii*), from Lieut.-Col. Sir GEORGE L. HOLFORD, K.C.V.O.—A model flower of fine substance, with pure white dorsal sepal and rose-purple leaves. The petals and lip are gamboge yellow, tinged with purple.

Cypripedium Gaston Buttel, from Mr. E. V. Low, Vale Bridge, Haywards Heath.—Although this fine *Cypripedium* has been frequently shown at the R.H.S. meetings, the Committee has never recognised its merits before. The variety shown had a fine, flat, rose-coloured dorsal sepal, with purplish lines and a white margin, the rest of the flower being dark-coloured.

Miltonia Warszewiczii leucochila, from Messrs. CHARLESWORTH & Co.—A charming variety, with pale-purple sepals and petals, white and crimped at the margins: the lower half of the large lip is ruby-purple, the middle portion being semi-transparent when seen with the light behind it.

CULTURAL COMMENDATION.

A Cultural Commendation was awarded to Mr. J. Collier (gr. to Sir JEREMIAH COLMAN, Bart., V.M.H., Gatton Park), for a plant of the scarlet *Odontioda Bradshawii*, raised at Gatton Park, the specimen bearing a four-branched spike with 36 flowers and flower-buds.

Fruit and Vegetable Committee.

Present: J. Cheal, Esq. (in the Chair); and Messrs. C. G. A. Nix, O. Thomas, A. Dean, G. Reynolds, J. Davis, and G. Wythes.

The attendance did not constitute a quorum.

A seedling Apple was shown by Mr. A. TRIMM, of Chichester, which in form, size and colour bore some resemblance to Hollandbury. The flesh is soft white, juicy and of a pleasantly acid taste. It was said to have been produced on a four-year-old tree. The exhibitor was asked to submit fruits at some future meeting.

Seven diverse stocks of Dandelion heads partially blanched, grown under trial at Wisley, were submitted. Three marks were awarded Broad-leaved (JAS. VEITCH & SONS), showing exceptionally stout, dense heads of leafage and two marks to the same variety (BARR & SONS). There were two other stocks of the Broad-leaved type, also the Moss-curl and the Cabbage-leaf varieties, both of dwarf habit.

NATIONAL SWEET PEA.

ANNUAL MEETING.

DECEMBER 15.—The annual general meeting of members took place on this date, at the Hotel Windsor, Westminster. The proceedings were presided over by the President, Mr. N. N. Sherwood, and there was a good attendance of members. When the minutes of the last meeting had been adopted, the President formally moved the adoption of the report and balance-sheet for the current year.

EXTRACTS FROM THE ANNUAL REPORT.

The membership of the Society shows no great increase upon that of 1909, because the accession of 166 new members is heavily discounted by the losses. In many instances it would seem that if members do not pay their subscriptions early in the year, they ignore subsequent reminders of their indebtedness, and so fall out of the ranks. Remembering how widespread is the love for and culture of Sweet Peas, it cannot be allowed that the Society has yet reached the high-water mark of membership. The Committee feels that, considering the good work the Society has done and is capable of doing, the members should make a point of securing new adherents to the Society. There are now about 1,000 members. Fourteen societies have ceased to be affiliated with us, but 22 new societies have joined, so that there are now 109 societies in affiliation.

Financially, the Society is in a very satisfactory position. Fifty pounds were placed on deposit early in the year, out of the balance from 1909, and it has not been necessary to touch that sum. Indeed, a further sum of £20 has been placed on deposit, every liability has been discharged, and a substantial balance is carried forward.

The experiment of holding a two days' exhibition at the Royal Horticultural Hall proved most successful. The display was a particularly fine one, competition being keen and the flowers good. Every vase was filled up with water at the close of the first day, and, as a result, the flowers remained in excellent condition throughout the second day. The takings at the doors exceeded expectations, therefore the Committee has felt justified in arranging for a two days' show at Westminster in 1911, and the dates fixed are July 11 and 12.

Following the annual meeting held on December 10, 1909, a very successful Sweet Pea Conference was held at the Hotel Windsor, under the presidency of Mr. Horace J. Wright.

After winning it at Dublin in 1908 and at Saltain in 1909, Mr. Thos. Stevenson won the Provincial Cup (pre-

sented to the Society by Mr. Ernest J. Edwards), at Luton, in 1910, and so the handsome cup has passed into the possession of his employer, E. McAtta, Esq., while Mr. Stevenson has three gold medals to prove his success.

Beautiful weather favoured the Society on the occasion of the outings. One trip was to Feering, where, at the invitation of the President, Mr. N. N. Sherwood, V.M.H., a large number of members inspected the extensive trials of Sweet Peas and other flowers grown by Messrs. Hurst & Son. Mr. Sherwood's delightful private garden at Prested Hall was a further attraction. Later in the day the members visited Messrs. Dobbie & Co.'s grounds at Marks Tey, and inspected another fine lot of Sweet Peas. On July 14 numerous members of the Society proceeded to the Times Experimental Station, Sutton Green, Guildford, to inspect the Society's trials. The Sweet Peas were in grand condition, and the trials of intense interest. The trials were conducted by Mr. Chas. Foster, at Guildford, to the great satisfaction of both the Floral and the General Committee. There were 242 novelty trials and 70 purity trials. All these who sent stocks for trial were furnished with a copy of the Proceedings of the Floral Committee, and similar copies have more recently been sent to every member of the Society.

The members of the Floral Committee accomplished a large amount of good work. The thanks of the Society are hereby tendered to them. The result of their labours is already in the hands of the members.

The following Awards were made by the Floral Committee in favour of novelties grown in the trials at Guildford:—First-class Certificate and Silver Medal to *Stirling Stent* (Trial No. 93), from Mr. J. Agate, Havant; Award of Merit to *Masterpiece* (Trial No. 3), from Messrs. Dobbie & Co., Edinburgh; to Mrs. Hugh Dickson (Trial No. 90), from Messrs. Dobbie & Co.; to Arthur Green (Trial No. 141), from Messrs. Dobbie & Co.; and to *Cherry Ripe* (Trial No. 204), from Messrs. Gilbert & Son, Dyke, Bourne.

At the dinner held on the first day of the exhibition in 1910 there was a very general and hearty expression of opinion that the members should recognise in some tangible fashion the many services ably rendered by Mr. Chas. Foster in his capacity of superintendent of the Society's trials, and also the many gracious acts of kindness and hospitality extended to members by Mrs. Charles Foster, both at Reading and at Sutton Green. To give effect to this opinion, a small committee was formed, consisting of Messrs. N. N. Sherwood, W. Cuthbertson, W. P. Wright, Robt. Sydenham, and T. Stevenson. A substantial sum has been voluntarily subscribed, and a canteen, fitted with silver, purchased for presentation to Mr. and Mrs. Foster on the occasion of the annual meeting.

The horticultural world is looking forward with keen expectation to the great International Horticultural Exhibition, to be held in the grounds of the Royal Hospital, Chelsea, in May, 1912. The National Sweet Pea Society has offered £25 to the promoters of this exhibition, and will guarantee a further £25 in the event of a financial loss on the undertaking. Mr. N. N. Sherwood has promised a fine silver cup for Sweet Peas, and the Society has further offered one of its gold medals. Messrs. Walter P. Wright and Chas. H. Curtis are the Society's representatives on the General Exhibition Committee.

The resolution was seconded by Mr. Alexander Dean, who rejoiced that the Society had so far restrained itself in the season 1910 as to make but five awards to new varieties of Sweet Peas. He said that gardeners, some little time ago, were afraid that the whole literature of gardening would be upset by a plethora of Sweet Pea names. It was reassuring, therefore, to find that so few varieties were added to the lists. He referred to the sum which the Society intended to contribute to those charged with the responsibility of promoting the International Exhibition of 1912, and he said that, although it was impossible to show many Sweet Peas from out-of-door culture in May, nevertheless, if cultivators did their best, they would be able to make a very effective display of Sweet Peas grown under glass. The report and balance-sheet were then accepted without discussion.

FINANCIAL STATEMENT FOR THE YEAR ENDING NOVEMBER 30, 1910.

RECEIPTS.		£ s. d.	EXPENDITURE.		£ s. d.
Balance brought forward from 1909	.. ..	84 18 9	Advertisements in Horticultural Press	.. ..	5 6 0
Subscriptions, 1909	.. ..	14 11 0	Purchase of Vases	.. ..	3 12 0
" 1910	.. ..	301 3 3	" Medals	.. ..	51 16 5
" 1911	.. ..	11 2 2	Engraving	.. ..	1 10 8
Fees from Affiliated Societies, 1910	.. ..	52 10 0	Preparation of Audit	.. ..	3 3 0
P. / z's Presented for 1909	.. ..	0 10 6	Financial Audit	.. ..	2 2 0
" 1910	.. ..	30 4 0	Trials Expenses—	.. ..	15 15 0
Charges for Trials at Guildford	.. ..	70 18 6	" " 50 per cent. Purity Trials Charges	.. ..	8 10 0
Hire of Space, London Show, 1909	.. ..	46 15 0	" " Postages	.. ..	0 16 9
" 1910	.. ..	0 19 0	" " Labels	.. ..	0 19 5
Extra Entries for London Show	.. ..	6 0 0	" " Floral Committee—	.. ..
Tickets	.. ..	0 10 0	Hotel	.. ..	£9 19 0
Gate Money at	.. ..	4 7 0	Fairs	.. ..	12 0 10
Hire of Vases	.. ..	65 8 6		.. ..	21 19 10
Sale of Annuals, Back Numbers	.. ..	8 11 6	Printing and Stationery	.. ..	195 3 7
" Catalogue of Sweet Pea Names	.. ..	1 3 11	H. C. / r. / n. to Secretary	.. ..	32 0 0
Advertisements in Annual and Schedule	.. ..	19 7 4	London Show—Prizes	.. ..	91 0 0
Interest on Deposit Account	.. ..	2 17 11	" " R.H.S. Hall Charges	.. ..	11 15 0
	.. ..	0 0 6	" " Labour, Police, Doorkeeper, &c.	.. ..	10 19 9
	.. ..	44 12 0	" " Hire and Carriage of Plants	.. ..	2 17 0
	.. ..	1 15 0	" " Clerical Assistance	.. ..	2 2 0
	.. ..	0 14 0	" " Dinner to Committee, Judges, &c.	.. ..	16 13 3
	.. ..		Luton Show (Provincial Cup Class) Prizes	.. ..	2 16 0
	.. ..		Expenses of Outings	.. ..	1 18 8
	.. ..		" " Photos	.. ..	3 0 0
	.. ..		Postages, Carriage, Telegrams, &c.	.. ..	46 11 11
	.. ..		Comm. on Advertisements	.. ..	4 8 6
	.. ..		Annual Meeting and Conference	.. ..	2 2 0
	.. ..		Photo Block of President, for Annual	.. ..	0 5 0
	.. ..		Eure of Safe—National Safe Deposit	.. ..	2 0 0
	.. ..		Bank Charges	.. ..	0 8 4
	.. ..		On Deposit at Bank	.. ..	100 0 0
	.. ..		Balance in Hand—Cash at Bank	.. ..	£170 10 0
	.. ..		Less Outstanding Cheques	.. ..	33 11 3
	.. ..			.. ..	136 18 9
	.. ..			.. ..	£768 10 10

Audited as per Vouchers and Bank Pass Book and found correct,

December 1, 1910.

RICHARD GLUYAS,

Union of London and Smiths Bank,
10, Cornhill, E.C. 4.

Mr. George Gordon afterwards proposed a vote of thanks to the Society's officers and committees, this resolution being seconded by Mr. W. B. Cranfield. The President returned thanks on behalf of himself and the other officers. He (Mr. Sherwood) said that he was one of those who were responsible for the inauguration of the Society, and he felt that the progress the Society had made was in every way satisfactory, and that it might be trusted to continue in a prosperous condition.

Mr. S. B. Dicks next moved that Lady Northcliffe be elected President for 1911, and after the motion had been seconded by Mr. Collingridge, it was accepted unanimously, as was also the next resolution, that Mr. Edward Sherwood should be appointed hon. treasurer.

Mr. Horace J. Wright next proposed that Mr. G. W. Leak be appointed chairman of the General Committee for the ensuing year, and this resolution was adopted. After the re-appointment of Mr. Gluyas as auditor, Mr. W. Cuthbertson proposed the re-appointment of Mr. C. H. Curtis as hon. secretary. He stated that the honorarium the Society gave to Mr. Curtis last year amounted to 50 guineas. He would now suggest that, in making the re-appointment, the honorarium should be increased to 60 guineas. This step, said Mr. Cuthbertson, was all the more justified by the fact that the Society had never recognized, in a financial sense, the work imposed upon the secretary in editing the *Sweet Pea Annual*, in conjunction with Mr. Horace J. Wright. The motion was seconded by Mr. J. S. Brunton, and carried unanimously.

The next proposition, by Mr. Thomas Stephenson, was to the effect that, in future, the General Committee should consist of 36 members, elected at the annual general meeting, and eight corresponding provincial members, and that the corresponding provincial members should be exempted from the condition that applies to the other members, namely, that they must attend three or more meetings of the Society's committees during the year. The resolution was adopted.

The balloting for the members of the General Committee then took place.

During the counting of the ballot the presentation of a canteen of silver was made to Mr. and Mrs. Foster, being the result of a subscription from the members in recognition of the valuable services Mr. Foster has rendered the Society in the management of the Sweet Pea trials for some years past, first at the Reading University College, and now at the *Times* Experimental Grounds at Sutton. It was much regretted that, owing to Mr. Foster's severe illness (from which we are glad to say he is now recovering), it was not possible for him to be present. In the circumstances, the presentation was made to Mrs. Foster, who attended the meeting on her husband's behalf.

Mr. Walter P. Wright called attention to the work of the Floral Committee, and referred to criticisms which had been made in regard to the composition of that body. He claimed that the work of the Floral Committee was performed satisfactorily. At the same time, he felt that there might be less ground for criticism if the number of members was raised from 12 to 18, 9 to be representatives of the trade, and the remaining 9 amateurs. Eventually it was decided that Mr. Wright's resolution should be recommended as an instruction to the General Committee. After this instruction had been decided upon, a proposal was made that it also be an instruction to the General Committee that the amateur members of the Floral Committee should be such as have had nothing to do with the raising of Sweet Peas for the trade. This instruction was carried by 29 votes against 23.

MEETING OF THE GENERAL COMMITTEE.

A meeting of the General Committee was held directly after the annual meeting, under the chairmanship of Mr. G. W. Leak, the newly-elected chairman. Mr. Walter P. Wright proposed that the Floral Committee should consist of the following 18 members:—Messrs. E. H. Christie, G. F. Drayson, Robert Hallam, Commandant Humphreys, Thomas Jones, H. H. Lees, A. Malcolm, H. A. Perkin, Thomas Stevenson, R. Bolton, John Bridgeford, W. Deal, S. B. Dicks, George Herbert, A. Ireland, Herbert Smith, A. J. Stark, and W. J. Unwin. It was proposed by Mr. Breadmore that there should be a chairman in addition to the 18 members, and that the chairman should

be an amateur. This was accepted by Mr. Wright as part of the original resolution. Discussion arose upon the question of defining what constituted an amateur member, and during this discussion several motions for adjournment were made and rejected. Eventually, Mr. Wright's resolution was accepted, and the Floral Committee for 1911 will be composed of the names already given.

Mr. Walter P. Wright was then elected to the office of chairman of the Floral Committee.

The balloting for the Executive Committee resulted as follows:—Messrs. C. W. Breadmore, W. Cuthbertson, William Deal, S. B. Dicks, Charles Foster, E. F. Hawes, E. W. King, R. Hooper Pearson, Herbert Smith, Thomas Stevenson, W. J. Unwin, Horace J. Wright, G. F. Drayson, and H. A. Perkin.

DINNER AND CONFERENCE.

A dinner was arranged for 5.30, at which Mr. Edward Sherwood presided. The company numbered about 50, including several ladies.

The conference commenced at 7 p.m. Mr. G. W. Leak presided for a short time, when he was compelled to leave, and the chair was then taken by Mr. Horace J. Wright, the members present numbering considerably over 70, and most of them stayed until the finish, which did not come until after 10 o'clock.

JUDGING SWEET PEAS.

The first paper was upon the judging of Sweet Peas, and, in the absence of the author, Mr. Walter P. Wright, it was read by the secretary, and was as follows:—

A judge of Sweet Peas has a different, and, in my opinion a more difficult task than a judge of Roses, Chrysanthemums, Dahlias, Carnations, or indeed any other popular florists' flower.

In the first place, it is customary to set up Sweet Peas in vases, each variety being represented by a number of stems. In the case of the other flowers named it is usual to show one flower only of each variety. It is true that sprays of garden varieties are sometimes shown, but they are in minor classes, and as a rule the number of specimens is so small, and the arrangement such, that all the flowers can be seen at a glance.

There is certainly no parallel amongst other leading florists' flowers to the Sweet Pea, with its 20 or so stems per vase, and its three or four flowers on each stem. For this reason, we who specialise in what from the exhibition point of view is a new flower cannot turn for guidance to the rules or principles of other florists; we have to work out our own salvation.

There is another reason why the judging of Sweet Peas is different from that of other flowers. In practically all the principal colours we have two types: the plain or grandiflora, and the waved or Spencer. Many of the varieties are identical in colour; they differ only in form.

Given 24 varieties of Roses or Chrysanthemums, a judge has 24 specimens to examine in order to make sure that there are no duplicates. Given 24 varieties of Sweet Peas, he has, in the ordinary way, 480 specimens to inspect. Any one of the 20 sprays in any one of the 24 vases may be a plain where it should be a waved, and if there is one, the exhibit is liable to disqualification.

The difficulty of giving correct awards is increased by the absence of guiding principles as to (1) length of stem; (2) allowance of haulm or otherwise; (3) disposition of the flowers on the stem; (4) size; (5) freshness. Judges follow a go-as-you-please course, and are swayed by individual tastes and preferences. One attaches paramount importance to length of stem and size of bloom, another to freshness. Another never troubles to see whether there are plain and waved flowers in the same vase. One of our friends told me that on disqualifying a competitor for mixing plain and waved flowers, the latter smiled sweetly and, quite unabashed, remarked that as he had "tried it on" successfully with several judges previously, he thought he might as well take his chance again!

The greater the difficulty in judging Sweet Peas, and the greater the confusion as to principles, the more necessary it is that the problem should be faced, and I think the time has come for the National Sweet Pea Society to take action, with the object of establishing an authoritative code. In order to further this, I propose to set out the principal points, and give opinions

thereon, with a view to evoking discussion. I suggest that when the debate closes a set of rules for judging be drawn up, representing the collective wisdom of the Society, and that they be printed in the Society's publications and pressed on the attention of affiliated societies.

(1) HAULM.—In my opinion, one of the first rules laid down should be that stems are really to be flower stems, and not haulm. The inclusion of haulm attached to the stems should disqualify.

(2) NUMBER OF STEMS.—In exhibiting a given number of Roses, Chrysanthemums, or Carnations it is usual to use perforated boards, so that it is a simple matter to get in the right number of blooms and no more. It is wholly different with Sweet Peas. The use of movable vases on tables or stages makes the task of counting more onerous, and if to this is added the obligation of counting, say, 20 sprays into each vase, the task is a serious addition to that of choosing stems and arranging vases. For this reason I believe in stating 20 sprays as an approximate number, with the warning that crowded vases will be passed over. Few, if any, judges pretend to count the contents of vases. In judging a show, it is my custom to state at the outset that I do not intend to count, as this would waste valuable time that ought to be given to judging alone. Time devoted to counting is time taken from judging. As things are, if a mistake is discovered it is generally at the instance of another competitor, and inasmuch as it is almost impossible to count the contents of a vase without handling the stems, the way is open for substitution, subtraction, or addition. For these reasons, I am opposed to a fixed number being stated. Nor do I think that a rigid rule is necessary in order to prevent awards being influenced by quantity rather than quality. A judge who has a good code to work upon, and a mind of his own, is not likely to be influenced by mere numbers.

(3) WIRING.—The use of wire to mount the stems should disqualify.

(4) MIXED TYPES.—Judges should be warned to look out for cases of plain and waved flowers being mixed in a vase of one variety, and to disqualify when found.

(5) LENGTH OF STEM.—Inasmuch as stems are sometimes staged 2 feet long, with the flowers straggling along them, and showing wide gaps, it might be wise to consider a suggestion that stems 18 inches in length are quite long enough to make an effective vase.

(6) NUMBER AND DISPOSITION OF THE FLOWERS.—The stems should carry three or four, the flowers should face one way, and should be near enough together to form a homogeneous set. Long stems with large flowers widely separated should be discountenanced. This is not a case for disqualification, but for showing, by the choice of neater, more refined specimens for the prizes, that coarse examples are not appreciated. At present, judges are at variance with respect to this particular, and many, who at heart disapprove of coarseness, are afraid to ignore the giants because of the criticisms of the crowd. The public, however, would soon become educated up to an appreciation of genuine quality.

(7) FRESHNESS.—Great stress should be laid on staging young, fresh flowers. Judges should be instructed that old flowers, however large, ought to be passed. If some vases are young, and some old, points should be deducted from the latter.

(8) SPOTTED FLOWERS.—Speaking broadly, clean flowers are desirable, but I think that young flowers which are merely spotted by a shower should be penalised less severely than blooms that are curling and discolouring from age.

(9) BLENDING OF COLOURS.—Judges might be taught with advantage that as the artistic arrangement of colours is desirable, a stand in which the colours are well blended might, other things being equal, carry the award over one in which the colours were not well arranged. Colour-blending should not, however, carry inferior flowers to victory.

(10) DOUBLE STANDARDS.—I think that double standards should be regarded as defective, on the ground that they mar the symmetry and harmony of the flower.

PROCEDURE FOR JUDGES.—I think that the following might be suggested as good procedure for judging Sweet Peas:—

- (a) When starting, count the exhibits in each class with the secretary's assistant, to make sure none is omitted.
- (b) Count the number of vases.
- (c) See that the exact number of varieties specified in the schedule are present in each exhibit.
- (d) Make a preliminary survey, and rule out those stands that are palpably defective, in order to be able to concentrate attention on the eligibles.
- (e) Look through the vases in the selected stands for mixed types.
- (f) Make the awards on freshness, number of flowers per stem, size of flowers, disposition, and blending of colours. Compare vases of the same varieties side by side.
- (g) Take a final look over, to make sure that there is no oversight.
- (h) Mark 1st, 2nd, or 3rd on the back of the exhibitor's card.
- (i) Be blandly unconscious of the subsequent comments of the defeated competitors and "the Man in the Street," but give courteous attention and explanation to any inquiry made through the executive.
- (j) Invest your fees in new varieties for the following year.

As a concise summary, I would suggest the following scale of points:—

QUALITIES.	POINTS.
Freshness and good colour ...	6
Number of flowers per stem (three to four) ...	4
Length of stem (approximately 18 inches) ...	4
Arrangement of flowers on stem ...	4
Size of bloom (approximate width of standard $1\frac{1}{2}$ inch) ...	4
Colour-blending ...	2
Total ...	24

Mr. Thomas Stevenson supported the paper and passed in brief review the chief points raised by Mr. Wright. There followed a discussion engaged in by Messrs. A. Malcolm, J. Fraser, J. Merrill, T. A. Weston, A. E. Usher, R. F. Felton, C. W. Breamore, S. B. Dicks, W. Cuthbertson, E. H. Christy, and W. J. Unwin. Considerable diversity of opinion was evidenced, but the most debatable point appeared to be whether double standard should or should not be regarded as a fault, as suggested by Messrs. Cuthbertson, T. Stevenson, Walter P. Wright and Horace J. Wright. In order to obtain the views of the meeting on the question, it was put as a motion, and resolved, that in judging double standards should not be discounted.

Arising out of Mr. Wright's paper, although it was not dealt with until later in the evening, came the matter of pointing. A standard of 24 points had been suggested, but this number was deemed unwieldy, and Mr. Cuthbertson proposed, and it was seconded by Mr. Bolton, that rules of a more simple, but equally comprehensive, nature should be adopted by judges who desired loyalty to support the wishes and opinions of the members of the Society. It was therefore unanimously resolved that Mr. Wright's propositions under the headings A, B, C, D, and E should be adopted, and that F, G, H, and I be as follows:—

- (f) Be prepared to make awards on freshness, number of flowers per stem, size of flowers, disposition, and blending of colours. Compare vases of the same variety side by side.
- (g) Give a maximum of six points per bunch, this maximum to be allocated to the best bunch or bunches in the stands, and then point the other bunches, by halves if necessary, working downwards. In awarding these points, due regard must be had to freshness, quality and size of flowers, as referred to above.
- (h) It is also recommended, where necessary (that is when the bunch pointing brings an equality or nearly so), that six points extra be taken as a maximum for arrangement and blending of colours, the points so obtained being added to the total bunch points.

- (i) Double standard flowers shall not be discounted.

The second paper, by Mr. George Herbert, was on "The Culture of Sweet Peas," especially from the exhibition point of view. From a man who has repeatedly proved his ability as a grower, it was expected that the information would be essentially sound and practical, and such proved to be the case. The discussion was animated and protracted.

NATIONAL DAHLIA.

(ANNUAL MEETING.)

DECEMBER 20.—The annual general meeting of this Society was held at the Hotel Windsor on Tuesday last. Mr. Edward Mawley, V.M.H., President of the Society, presided.

Mr. E. F. Hawes (hon. secretary) read the annual report and financial statement.

EXTRACTS FROM THE REPORT.

A conference on Dahlias was held on Friday, March 4. The meeting was well attended and papers were read as follows:—"Dahlias for Garden Decoration," by Mr. George Gordon, V.M.H.; "Growing Dahlias for Exhibition," by Mr. J. Stredwick; and "Methods of Exhibiting Dahlias," by Mr. J. B. Rivington. A full report of the papers and subsequent discussion was published in the *Annual Supplement and Conference Report*, and was issued free to all members of this Society.

Two exhibitions were again held during the month of September, the first at the Crystal Palace, on September 8 and 9, which was arranged a week later than in former years. Owing to the lateness of the season, this arrangement was a fortunate one, as, even at that date, several former exhibitors were unable to show. The second show was again held at the Royal Botanic Gardens, Regent's Park, on September 20 and 21. A first-class show resulted.

Four meetings of the Floral Committee were held for the purpose of granting awards to seedling Dahlias, one in conjunction with each of the Society's shows, and two additional ones, on September 13 and 27, in the Royal Horticultural Hall.

A large and comprehensive trial of single Dahlias, consisting of 86 varieties, was conducted for the Society by Messrs. J. Cheal & Sons, Lowfield Nursery, Crawley, Sussex. This was visited by members of the Floral Committee on September 12, and three marks of excellence were given to the varieties considered most suitable and effective for garden decoration.

Your Committee have had much pleasure in enlarging and bringing up to date, during the present year, the list of varieties of Dahlias contained in the *Official Catalogue and Culture Guide* of 1904. The Conference papers, with discussion, were also included, and this supplement has proved a welcome addition to the literature of the Society.

Notwithstanding the energetic policy pursued by the Society during the past year, your Committee are glad to report that the liabilities are nil, and that they have a small balance on the right side, and, although the reserve fund has been apparently reduced, the increase of assets over liabilities has been distinctly increased.

During the year the Society has made considerable progress, and your Committee feel that it is well on the way to a more satisfactory position than it has occupied for many years. Twenty new members have been enrolled during the year.

The policy of holding two shows during the present year has proved successful and your Committee has arranged to hold two similar shows during 1911, at the Crystal Palace and the Royal Botanic Gardens, on similar dates to last year.

On moving the adoption of the report, the president stated that he considered the members of the Society should congratulate themselves on the excellent work done during the year. They had increased their expenditure by publishing the supplement to the official catalogue, which, together with the conference papers, was a welcome addition to their publications. They had paid all the prize money and other debts, and the only liability against the Society was that of two subscriptions paid for 1911 in advance. The adoption of the report was seconded by Mr. John Green, the hon. treasurer, who said the committee were glad to know that their efforts were being backed up by the members.

Mr. George Gordon, V.M.H., whilst endorsing what had been said previously, as to the excellent work achieved during the past year, including the conference, and trial of Single Dahlias, felt that a determined effort should be made to increase the income of the Society.

Mr. J. Cheal said that careful consideration had been given to this matter by the general committee at a meeting held previously.

The report and balance-sheet were adopted.

The thanks of the meeting were cordially given to the retiring officers and committee on the proposal of Messrs. G. Davidson, seconded by Mr. R. Hooper Pearson, who stated that it was evident from the report that there was no reason for the Dahlia Society to be despondent, but that there was a good prospect of the Society attaining to a success equal to the most flourishing of the floral societies. The president made a suitable reply.

On the motion of Mr. John Green, seconded by Mr. J. Harrison Dick, the meeting amended By-law 3 by adding "a chairman of committees" to the officers. In order to bring By-law 6 into

accord with this alteration, the words "and a chairman" were deleted. By-law 6 was also further amended by increasing the numbers of the Executive Committee from 12 to 18. The date of the annual meeting was, on the motion of Mr. C. H. Curtis, altered by substituting for "the third Tuesday in December" the "last R.H.S. show day in November."

Mr. Edward Mawley was re-elected president.

Owing to the enforced retirement of Mr. Thos. Hobbs from the list of vice-presidents, Mr. John Green was elected in his place. Mr. George Gordon was appointed chairman of committees, Mr. John Green hon. treasurer, Mr. E. F. Hawes hon. secretary, and Mr. W. Stephens honorary auditor.

After the conclusion of the business, the General Committee met for the purpose of electing the Executive Committee as follows:—Messrs. H. L. Brousson, Baxter, Cadman, J. Cheal, C. H. Curtis, E. Doncaster, W. Lockyer, S. Mortimer, J. B. Riding, J. Stredwick, A. Turner, J. T. West, W. Stephens, C. Lucking, W. F. Laurie, J. Harrison Dick, G. Davidson, and J. Emberson. It was decided to hold the committee meetings at 4 p.m. instead of 2 p.m.

STIRLING HORTICULTURAL.

DECEMBER 9.—The annual general meeting of the society was held on the above date. Mr. Geo. Petrie presided. The report and balance-sheet for the year were read and adopted. The past year has proved satisfactory, the large financial deficit of two years ago being considerably reduced. The future promises well for the society, as the affairs are in the hands of a capable management. The secretary is Mr. James McArthur, 13, Murray Place, Stirling.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

DECEMBER 12.—The monthly committee meeting was held at the Royal Horticultural Hall, Vincent Square, Westminster, on this date. Mr. Charles H. Curtis presided.

Three new members were elected, making a total of 70 for the year. Various cheques were passed for members entitled by age to draw from their account.

NATIONAL CHRYSANTHEMUM.

DECEMBER 19.—A meeting of the Executive Committee was held on this date at Carr's Restaurant, Strand. Mr. Thomas Bevan occupied the chair. The Secretary, Mr. R. A. Witty, gave an interim financial report showing the receipts to date of £526 7s., and expenditure amounting to £431 2s. 5d.

Mr. D. B. Crane reported on the Floral Committee's visit to Swanley to inspect the trial of single Chrysanthemums undertaken by Messrs. H. CANNELL & SON (see p. 459).

It was resolved that an audit of the varieties exhibited at the November show should be incorporated in the new schedule. Upon the question being raised as to including a report of the recent conference, a discussion took place on the subject of providing literary matter generally for the benefit of the members.

The dates of the Executive and Floral Committee meetings were provisionally fixed. The Floral Committee dinner will take place at Carr's Restaurant following the Executive Committee meeting on February 20.

Several new members were elected.

GARDENING APPOINTMENTS.

[Correspondents are requested to write the names of persons and places as legibly as possible. No charge is made for these announcements, but if a small contribution is sent, to be placed in our collecting box for the Gardeners' Orphan Fund, it will be thankfully received, and an acknowledgment made in these columns.]

MR. ALAN McCALLUM, for more than 3 years Foreman in the glasshouses at Gallowhill, Paisley, N. D., as Gardener to B. B. McGEORGE, Esq., Cardale, Wemyss Bay.

MR. H. BAKER, late Gardener to G. H. HIRST, Esq., Croft House, Southall, Btley, Yorkshire, as Gardener to H. W. WILKINSON, Esq., Carthage Hall, Cross Hills, Knebly, Yorkshire.

MR. S. HORSBROFT, for the past 8 years Gardener to A. I. NORRIS, Esq., Longshaw, Chipstead, Surrey, as Gardener to the same Gentleman at Court House, Bantstead, Surrey. (Thanks for 1s. for the R.G.O.F. box.—Eps.)

MARKETS.

COVENT GARDEN, December 21.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in one day.—Eds.]

Cut Flowers, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Anemones (French), per dz. bunches	3 0-4 0		Mimosa, per pad...	6 0-10 0	
Arums (see Richardias)			Narcissus Paper White, per pad	8 0-9 0	
Azaleas, white, per dozen bunches	4 0-5 0		Soleil d'Or, per doz. bunches	4 0-6 0	
Bouvardia, per dz. bunches	4 0-5 0		Orchids, Cattleya, per doz.	10 0-12 0	
Camellias, per doz.	2 6-3 0		Cypripedium, per dz. blooms	3 0-4 0	
Carnations, p. doz. blooms, best American varieties	3 0-4 0		Odontoglossum, per dozen blooms	2 6-3 0	
—smaller, per doz. bunches	12 0-15 0		Pelargonium, Zonal, double scarlet	6 0-8 0	
Chrysanthemums, per dz. bunches	6 0-10 0		Poinsettias, per doz. heads	6 0-10 0	
—larger per doz. bunches	1 6-3 0		Ranunculus, double yellow, per dz. bunches	4 0-6 0	
—specimen blooms, p. doz.	4 0-5 0		Richardias, per dz. blooms	3 0-4 0	
Gardenias, p. doz.	3 0-4 0		Roses, 12 blooms, Niphetos	2 6-3 0	
Hyacinth (Roman), p. dz. bunches	9 0-12 0		—Bridesmaid	2 0-3 0	
Impatiens, white, per dozen	2 0-3 0		—C. Meimet	2 0-3 0	
Lilium anatum, per bunch	3 0-4 0		—Liberty	2 0-3 0	
—longifolium	2 0-2 6		—Mme. Chatenay	3 0-5 0	
—laureolum rubrum	2 0-3 0		—Richmond	3 0-5 0	
—laureolum album	3 0-4 0		—Sunset	2 0-3 0	
Lily of the Valley, p. dz. bunches	8 0-10 0		—The Bride	2 0-3 0	
—extra quality	10 0-15 0		Tuberose, p. cross	4 0-5 0	
—per doz. bunches	8 0-10 0		—per doz. blooms	0 5-0 6	
—per doz. bunches	2 0-3 0		Tulips, per bunch	0 8-1 0	
—per doz. bunches	3 0-4 0		—Parma, bunch	2 6-3 0	

Cut Foliage, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Adiantum cuneatum, per dozen bunches	5 0-8 0		Hardy foliage (various), per dozen bunches	3 0-5 0	
Asparagus plumosus, long trails, per doz.	3 0-6 0		Holly, per dz. bds.	18 0-20 0	
—medium, doz. bunches	6 0-9 0		Ivy leaves, bronze	2 6-3 0	
—Sprengeri	6 0-9 0		—long trails per bundle	1 6-2 0	
Croton leaves, per dozen bunches	6 0-9 0		—short green, per dz. bunches	1 0-2 0	
Ferns, per dozen bunches (English)	3 0-4 0		Moss, per gross	4 0-5 0	
—(French)	4 0-5 0		Mistletoe, per crate	9 6-10 6	
			Myrtle, dz. bchs. (English)	4 0-6 0	
			—small-leaved	4 0-6 0	
			—French	1 6-2 0	

Plants in Pots, &c.: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Aralia Sieboldii, p. dozen	5 0-6 0		Euonymus, per dz., in pots	4 0-8 0	
—larger specimens	9 0-12 0		Euonymus, from the ground	3 0-6 0	
—Moseri	6 0-8 0		Ferns, in thumbs, per 100	8 0-12 0	
—larger plants	9 0-15 0		—in small and large 60's	12 0-20 0	
Araucaria excelsa, per dozen	12 0-30 0		—in 48's, per dz.	5 0-8 0	
—large plants, each	3 6-5 0		—choice sorts, per dozen	8 0-12 0	
Asparagus plumosus nanus, per dozen	9 0-12 0		—in 32's, per dz.	10 0-18 0	
—Sprengeri	6 0-9 0		Ficus elastica, per dozen	8 0-10 0	
Aspidistras, p. dz., green	15 0-24 0		—repens, per dozen	4 0-5 0	
—variegated	24 0-36 0		Isolepis, per dozen	4 0-5 0	
Begonia Gloire de Lorraine, p. dz.	8 0-12 0		Kentia Belmoreana, per dozen	15 0-21 0	
—Turnford Hall, white	12 0-24 0		—Fosteriana, per dozen	18 0-24 0	
Chrysanthemums in pots	9 0-12 0		Lantana borbonica, per dozen	15 0-18 0	
—specials	18 0-24 0		Lilium longiflorum, per dz.	12 0-15 0	
Cocos Weddelliana, per dozen	18 0-30 0		Marguerites, white, per dozen	6 0-8 0	
Crotons, per dozen	12 0-18 0		Poinsettias	8 0-15 0	
Cyclamen, per doz.	9 0-12 0		Selaginellas, per dozen	4 0-6 0	
Cyperus alternifolius, per doz.	5 0-6 0		Solanums, per dozen	8 0-10 0	
—laxus, per doz.	4 0-5 0		Spiraeas (pink) (white)	12 0-18 0	
Erica gracilis, p. dz.	9 0-12 0		—(white)	6 0-9 0	
—gracilis nivalis	9 0-12 0				
—hyemalis	10 0-15 0				

Fruit: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Apples (American), per barrel:			Apples (Nova Scotia), per barrel:		
—Greening	22 0-24 0		—Ribston Pippin	22 0-24 0	
—Baldwin	22 0-24 0		—Spy	23 0-24 0	
—York Imperial	22 6-24 6		—Spitzenburg	23 0-24 0	
—Albamarle	28 0-30 0		—Leeks	24 0-25 0	
—(Nova Scotia), per barrel:			—Blenheim Pippin	22 0-24 0	
—King of the pippins	22 0-24 0		—Baldwin	23 0-24 0	
—Wine Sap	10 0-12 0		—Greening	22 0-24 0	

Fruit: Average Wholesale Prices (continued).

	s.d.	s.d.		s.d.	s.d.
Apples (Californian), Newtown Pippin, per case, 4 tiers	8 6-10 0		Grapes (English), — Almeria (tinted), barrel	12 6-21 0	
— 4 tiers	6 6-8 0		Lemons: — Malaga (420)	15 0-20 0	
— (Oregon), New- town Pippin	10 6-12 6		— Messina (300)	15 6-16 6	
— Yakima	10 6-12 6		Mandarins, p. box 25's	1 0-1 6	
— (Wenatchee Valley), Wine Sap, per case	8 0-10 6		Medlars (English), 2 bushels	1 0-1 6	
— Jonathan	8 0-10 6		— (French), per basket, 25 lbs.	4 0-5 0	
— Grimes' Golden	8 0-10 6		Melons, Spanish Bronze (24's)	14 0-15 0	
— Spitzenburg	8 0-10 6		Nuts, Almonds, p. bag	96 0-42 0	
— Ark Anna	8 0-10 6		— Chestnuts (Ital- ian), per sack	21 0-22 0	
— Rome Beauty	8 0-10 6		— (Redon), per bag	12 6-14 6	
— Black Twig	8 0-10 6		— Brazil, new, per peck	3 0-3 6	
— Baldwin	8 0-10 6		— per cwt	48 0-50 0	
— (English) Cox's Orange Pippin, 1/2 bushel	7 6-12 0		— sorted	55 0-56 0	
— Bramley's Seedling, per bushel	6 6-8 0		— Barcelona, per bag	32 0-34 0	
— Blenheim Pippin, per bushel	5 6-7 0		— Cocoon (100)	10 0-14 0	
— Wellington, per bushel	8 0-10 6		— English Wal- nuts, p. dz. lbs.	7 0-8 0	
Bananas, bunch			— Doubles, per doz. lbs.	12 0-18 0	
— Doubles	11 0-14 0		— (French), Gre- nobles, bags	9 6-10 0	
— No. 1	9 0-10 0		— English Cobs, per lb.	0 10-1 0	
— Extra	10 0-11 0		— shelled, 1 lb. box of Walnuts	1 4-1 6	
— Giant	13 0-14 0		— 1 lb. box, Barcelona	9 6-10 0	
— Red coloured	4 0-5 6		Oranges (Jamaica), per case (252)	10 0-11 0	
— Red Doubles	8 0-9 0		— (200)	10 6-12 0	
— Loose, per doz.	0 6-1 0		— (216)	11 6-12 0	
— Jamaica (per bunch), per doz.	6 0-7 0		— Dania (216)	12 6-16 6	
— Giant	6 0-7 0		— New (Garrucha), per case (210)	21 0-22 0	
— Loose, per dozen	0 5-0 6		— (714)	12 6-15 6	
Cranberries, per case (30 qts.)	9 6-10 6		— Jaffa, case (114)	8 6-9 6	
Dates (Tunis), per doz. cartons	4 9-5 0		Pears (Californian), per case:		
Figs (Italian), boxes	0 8-1 0		— Green Moreau	12 6-13 6	
Grape Fruit, case:			— Winter Nelis	17 0-20 0	
— 96's	12 0-13 0		— Easter Bonie	9 6-10 6	
— 80's	12 0-13 0		— Doyenne du Comice	22 6-24 0	
— 64's	12 0-13 0		— (French), case	3 0-3 6	
— 54's	12 0-13 0		— Cathag, case	3 6-4 6	
Grapes (English), per lb.	0 8-1 0		— (Dutch), stew- ing Molliés, per 1/2 sieve	3 6-4 0	
— Black Alicante	0 8-1 0		— Persimmon, per box	1 6-2 0	
— Muscat of Alex- andria	1 3-2 6		— Pineapples	2 6-3 6	
— Canon Hall Mus- cat	2 6-4 0		Pomegranates, per case	1 9-2 3	
— Gros Colmar	1 0-1 6		Quinces, p. 1/2 sieve	6 0-6 6	
— Black Alicante (Guernsey)	0 4-0 6				

Christmas Fruits and Preserves.

	s.d.	s.d.		s.d.	s.d.
Figs, 1 lb. packets, per doz.	5 0-5 6		Nuts, Monkey, hand-picked, per bag	22 6-24 0	
—boxes, per doz.	3 0-5 0		Dates, per cwt:		
—Natural, p. cwt.	27 6-28 6		—(Lair)	9 9-10 0	
—Laps, per cwt	23 6-24 6		—(Kadrowie)	11 3-11 6	
Nuts, Brazil, hand-picked, best, per cwt.	65 0-66 0		—(Halle we)	12 6-13 6	
—Barcelona, hand-screened, per bag	37 6-38 6		Metz Fruits, p. dz.:		
—Almonds (Montague), per bag	48 0-49 0		—1 lb. boxes	3 9-4 0	
—(Lutz), p. bag	44 0-45 0		—1/2 lb. boxes	6 6-6 8	
			—1 lb. boxes	10 0-10 6	
			Mixed Fruits, per dozen	8 3-8 6	
			Plums (Carlsbad), 1/2 lb. boxes, per dozen	9 0-9 6	

Vegetables: Average Wholesale Prices.

	s.d.	s.d.		s.d.	s.d.
Artichokes (Globe), per dozen	1 6-2 0		Mushrooms, p. lb.	0 10-1 3	
—(ground) 1/2 sieve	0 9-1 0		—broilers	0 10-1 0	
—per bag	3 6-4 0		Mustard and Cress, per dozen punnets	0 6-0 8	
Aubergines, doz.	1 6-2 0		Onions, Dutch, bags	4 0-4 6	
Asparagus, Paris Green	4 6-5 0		—New Spanish, case	7 0-8 0	
Beans, Broad (French), p. pd.	2 6-3 6		—(English) bag	5 6-6 6	
—Jersey, per lb.	1 6-2 6		—Shallots, per lb.	0 2-0 3	
Beetroot, bushel	1 0-1 6		—Pickling, 1/2 sieve	2 0-3 0	
Cabbages, tally	4 0-4 6		Rhubarb	2 6-3 0	
Carrots (English) —cwt.	2 3-2 6		Parsley, 1/2 sieve	1 0-1 6	
—dirty	1 6-2 0		Pears (French), per pad	4 6-5 0	
—(French), per dozen bunches	4 0-5 0		—Guernsey, lb.	1 0-2 6	
Cauliflowers, hamper	2 0-2 6		Seakale, bundle	1 4-1 6	
Chicory, per dozen	6 0-10 0		Sprouts, 1/2 bushel	1 0-1 6	
Chicory, per lb.	0 34-0 4		—bags	2 0-2 3	
Corn cobs (Indian corn)	1 3-1 6		Tomatoes —(Canary), per bundle of 4 cases	10 0-12 0	
Cucumbers, p. doz.	13 0-18 0		—(French), per bag	2 0-2 6	
Endive, per dozen	0 6-0 9		—washed	2 3-2 6	
Herbs (sweet), packets, per gross	7 0-7 6		Watercress, p. dz. bunches	0 6-0 6	
Horse radish, 12 bundles	10 0-18 0				
Lettuce (French), Cos, per dozen	1 6-2 0				
Mint, p. doz. bchs.	2 0-2 6				

REMARKS.—Large quantities of Apples have been received from California, Oregon and Washington States, U.S.A. The English consignments consist mainly of Bramley's Seedling, a very popular market culinary variety. The second shipment of Californian Seedless Oranges arrived last Tuesday in splendid condition and well graded. St.

Michael Pines of fine quality are on sale at reasonable rates. Canary Island Tomatoes are a shorter supply and are meeting with a better demand. Winter Nelis, Doyenne du Comice, and Easter Beurré Pears from California are meeting with a very moderate demand. Prices all round for vegetables are moderate. The first consignments of Cape fruit for the season reached the market this week; they consisted solely of Apricots, the fruits being sound but very small. Trade generally shows a slight improvement on last week. The markets will be closed on Monday and Tuesday, December 26 and 27. E. H. K., Covent Garden, December 21, 1910.

Potatoes.

	per cwt.		per cwt.
Kents — s.d. s.d.		Lincolns — s.d. s.d.	
British Queen	4 0-4 6	British Queen	10 4-10 6
Up-to-Date	4 3-4 6	Up-to-Date	10 4-10 6
Bedfords —		Maincrop	4 3-4 9
Up-to-Date	3 9-4 3	Blacklands	3 8-3 6
British Queen	3 9-4 0	Dunbars —	
Lincolns —		per bag	
King Edwards	4 0-4 3	Up-to-Date	5 0-5 3
Evergoods	3 6-3 9	Maincrop	5 6-5 8

REMARKS.—Trade is slightly better, on account of the holidays, but the Potato market promises to be very quiet after Christmas for a week or two. Prices remain about the same. The stocks in London are still fairly heavy. Edward J. Newborn, Covent Garden and St. Pancras, December 21, 1910.

COVENT GARDEN FLOWER MARKET.

During the past week there has been but little improvement in trade or prices. This morning (Wednesday) large specimen blooms of Chrysanthemums could be purchased at 2s. to 8s. per dozen, whilst the smaller flowers were offered cheaper than earlier in the season. It is difficult to estimate what their value may be later in the week; but the salesmen are expecting further large consignments. Richardias (Callas) are well supplied. The price, 2s. to 3s. per dozen for good quality spathes, is an indication of their quantity. Lilium longiflorum is selling at rather less than its usual value for December. L. speciosum and L. s. album are making rather better prices, yet supplies of these also are large. Lily of the Valley is cheaper. Gardenias are scarce, and their prices uncertain. Tulips are good, though rather short-stemmed. Poinsettias are good and cheap. Carnations are fairly well supplied; if dull weather is experienced they will be scarcer. Violets, both home-grown and French, are plentiful. Other flowers are arriving in large quantities from France, including Anemones, Ranunculus, and Mimosa (Acacia dealbata). Cut foliage is well supplied, including long trails of Asparagus plumosus. There is a considerable difference in the length and size of the growths of this Asparagus; the large flat sprays are most in demand. Large quantities of hardy Evergreens are seen. Good Mistletoe and Holly are not over-plentiful, and they have been making rather higher prices than usual.

POT PLANTS.

Trade has not been over brisk, and prices are not exceptional for Christmas. Ericas are a great feature, the plants being well flowered, especially E. hyemalis. Cyclamens are better flowered than those seen earlier in the season. Begonia Gloire de Lorraine varies in quality considerably, some are of poor quality, whilst others are abundantly flowered. Poinsettias are good, but those with the largest heads of bracts are rather tall. Lilium longiflorum (or L. Harrisii) is procurable in plants of various heights. There is but little variation in foliage plants. A. H., Covent Garden, December 21, 1910.

DEBATING SOCIETIES.

NEWBURY GARDENERS'.—There was a well attended meeting of the society on Monday, the 12th inst., when Mr. Walter F. Giles, of Messrs. Sutton & Sons, Reading, spoke on "British and Continental Salad Plants." The lecturer described methods of growing lettuces in hotbeds under cloches. He also dealt with Radishes, Cabbage and Cos Lettuces, Tomatoes, Cucumbers, Celery, Beet, Endives, Onions, Watercress, Mustard and Cress, Chicory, Dandelion, Fenchio or Florence Fennel, Lamb's Lettuce, Rampion, American and Australian Cress, Celeriac, Tarragon, Orache, Swiss Chard, and others.

LEE, BLACKHEATH, AND LEWISHAM HORTICULTURAL.—A meeting was held on December 16, at the Church Street Schools; Mr. Judge presided. The lecturer for the evening was Mr. F. Phillips, honorary secretary of the Reigate Cottage Garden and Horticultural Society, his subject being "Vegetables." At the meeting to be held on January 27, a lecture will be given by Mr. R. C. Pullen, on the subject of "Chrysanthemums."

ALTON (HANTS) HORTICULTURAL.—At the fortnightly meeting of the society, held in the Mechanic's Institute, on Thursday, December 15, a lecture on "The Making of a Rock Garden" was given by Mr. T. Down, gardener at Basing Park. The lecturer dealt with his subject in a very able manner, and an interesting discussion followed the reading of the paper.

STIRLING & DISTRICT HORTICULTURAL.—The last monthly meeting of the session was held in McKillop's Temperance Hotel, Stirling, on December 13; Mr. George Petrie presided. The subject for the evening was "Over Sea and Land to the Malay Straits." This was the record of a journey undertaken by Mr. A. Cowburn, late foreman at Keir, to the rubber plantations in Penang. Eleven nominations were made for membership at the next meeting.

BRISTOL AND DISTRICT GARDENERS'.—The fortnightly meeting was held on December 15, at St. John's Parish Rooms; Mr. E. T. Parker in the chair. A paper on "The Herbaceous Border" was read by Mr. Thomas, of Llanishen, Cardiff. Mr. Thomas advised grouping different plants having flowers of the same colour, rather than massing a large number of plants of one variety. On dry soils planting could be undertaken in the autumn; but on wet, heavy soils, it is best deferred till the spring.

Obituary.

ROBERT R. MAWSON.—Mr. Robert R. Mawson, proprietor of the well-known firm of landscape gardeners, Lakeland Nurseries, Windermere, died, at the age of 46, at his residence, Windermere, on the 8th inst., after an illness extending over a year. Mr. Mawson was the second son of the late Mr. John William Mawson, seed merchant and florist of Ingleton, Yorkshire, who left three sons. The three brothers opened a nursery at Windermere 26 years ago, and five years later the two younger brothers, Isaac and Robert, became sole owners of the business. They extended their connection, not only in this country, but on the Continent and in America. The younger brother died nine years ago, and the business passed into the hands of Mr. R. R. Mawson, who possessed a close acquaintance with every phase of garden construction. Not only did he carry out much of the work designed by his brother, but he also built up an extensive connection amongst architects, for whom he carried out numerous important works. Many of the gardens which he designed have been illustrated in these pages. Amongst the more important gardens laid out by the firm are Wych Cross, Sussex; Chelwood; Wood, North Tawton, North Devon; Hannaford, Ashburton, South Devon; Walmer Lodge, Walmer, Kent; The Hill, Hampstead; Rushton Hall, Kettering, Northamptonshire; Little Onn Hall, Staffordshire; Dunchurch Lodge, Rugby; and High Head Castle. The great esteem in which the late Mr. Mawson was held was seen in the large number of mourners who attended the funeral at the Bowness Cemetery, Windermere, on Saturday, December 17. The business at Lakeland Nursery will be carried on by Executors under the management of two nephews, who have been closely associated with the firm for many years past. Mr. Mawson leaves a widow, a son and two daughters.

WILLIAM KENNEDY.—We learn from *Horticulture* of the death of Mr. William Kennedy, a well-known landscape gardener and florist, at Greenfield, Mass. Mr. Kennedy, who was 69 years of age, was in his younger days employed on the estates of the Duke of Argyll in Scotland, and Sir Richard Wallace, Ireland.

ANSWERS TO CORRESPONDENTS.

ABNORMAL MUSHROOMS: *H. T. Oldown.* Abnormal Mushrooms such as those you send are not uncommon; in the issue for July 26, 1873, pp. 1,016, 1,017, will be found a series of 11 figures illustrative of various monstrosities found in Mushrooms; one of these, which somewhat resembles your specimens, is reproduced in fig. 212.

BEGONIA GLOIRE DE LORRAINE AND CYCLAMEN: *T. W. O.* The so-called "rust" on both the Begonia and the Cyclamen is not due to fungus or insect pest. The trouble is usually due to excessive moisture in the atmosphere of the plant-house.

CINERARIA DYING: *W. R.* The plant has been injured by mining larvæ that have eaten into the collar. There has evidently been an epidemic of the flies, and these have deposited their eggs at the base of the stem. Nothing can be done now to save the infected plants.

CYANIDING AN ORCHARD HOUSE: *Old Hand.* As the trees are at rest the cyaniding may be done at the following strength per 1,000 cubic feet contents, $2\frac{1}{2}$ ounces of sodium cyanide, five fluid ounces of sulphuric acid, and 15 ounces of water. Allow an exposure of 30 minutes and have the house at a temperature of 50° to 55°. Repeat the operation after an interval of 24 hours.

CYANIDING VINES: *Y. Z.* There is a certain element of danger in using hydrocyanic gas as a fumigant unless the greatest care is exercised. The machines which are sold for this purpose admit of the cyaniding being done without the person who is operating them being in the house at the commencement of the fumigant. Hydrocyanic gas being a deadly poison, it must, of course, be used only by a responsible person, the house must be securely locked until the following day and ventilation given before it is entered. See note in *Gardeners' Chronicle*, December 4, 1909, p. 388.

EMPLOYMENT IN CANADA: *Canadian.* Apply to the Canadian Emigration Offices, Whitehall. There is no list of addresses such as you require.

HORTICULTURAL INSTRUCTOR: *H. C.* A horticultural instructor should possess a good, general knowledge of the theory and practice of all branches connected with horticulture, and be able to express himself clearly before an audience. A knowledge of the sciences connected with gardening, such as botany, chemistry, physics, and economic entomology, will prove useful. A good general education, and satisfac-



THE LATE ROBERT R. MAWSON.

tory references as to conduct and abilities are required. Some diploma, such as the First-class Certificate in the examination held by the Royal Horticultural Society, or the advanced course of the Science and Art examination in domestic economy and rural hygiene, would be a recommendation.

LATE-ROOTED CHRYSANTHEMUMS: *A Lover of Mums.* We have submitted your questions to Mr. Stevensen, the writer of the paper on p. 456, and his reply is as follows:—"I never stop the plants except when necessary for the proper timing of the buds. Many varieties break naturally at or about the proper dates, and



FIG. 212.—ABNORMAL MUSHROOM.

they are allowed to develop what may be termed the first natural crown, and the bud is then taken. If the plants require stopping, the first bud that develops after this should be taken. The following dates are suitable for stopping the varieties you mention, but it must be borne in mind that they will then be in their flowering pots and growing freely. Plants in a less vigorous condition of growth would require to be stopped earlier, as the weaker the plants the longer the flower takes to develop

properly. J. H. Silsbury, Mary Inglis, June 25; Mrs. W. Knox, July 1; Leigh Park Wonder, June 12; Mrs. F. W. Vallis, June 15; F. S. Vallis, H. Perkins, Rose Pockett, Valerie Greenham, June 20; Mrs. R. H. B. Marsham, June 12; Walter Jinks, June 15; Mme. Paola Radaeli, May 20; Reginald Vallis, June 12; and W. A. Etherington, June 27. The varieties Mary Inglis, Leigh Park Wonder, Mrs. F. W. Vallis, Henry Perkins, Valerie Greenham, and W. A. Etherington are not to be recommended for inclusion in a small or medium-sized collection of Chrysanthemums intended for exhibition."

NAMES OF FRUITS: *Cornishman.* 1. Washington; 2. Taunton Golden Pippin.—*A. M. K.* 1. Broad Eye Pippin; 2. Herefordshire Pearmain; 3. Winter Hawthornden; 4. Bedfordshire Foundling.—*A. B. Earle.* The Pear was smashed in the pest.—*J. Coombes.* 1. Beauty of Devon; 2. Bitter Sweet; 3. Hanwell Souring; 4. Annie Elizabeth.

NAMES OF PLANTS: *P., Horsham.* 1. Cotoneaster Simonsii; 2. Cryptomeria elegans; 3. Thuya orientalis; 4. Berberis vulgaris; 5. Thuya occidentalis var.; 6. Juniperus chinensis albo-variegata; 7. Holm Oak (Quercus Ilex); 8. Cupressus pisifera plumosa; 9. Distylium racemosum variegatum; 10. Cupressus Lawsoniana var.; 11. Cupressus (Retinospora) squarrosa; 12. Juniperus virginica.—*J. M. T., Truro.* Escallonia floribunda.—*H. H. Ornithogalum lacteum.*—*L. S., Dumfries.* 1. Duranta Plumieri variegata, so far as can be determined without flowers; 2. Polypodium sub-auriculatum; 3. Dieffenbachia Seguine; 4. Elæodendron orientale (syn. Aralia Chabneri); 5. Hoffmannia Ghiesbreghtii variegata; 6. Aralia gracilis.—*O. R.* 1. Oncidium sphacelatum; 2. Odontoglossum gloriosum; 3. Celia Baueriana; 4. Stelis ophioglossoides.—*T. N. V.* 1. Cyrtopodium Lecanum; 3. C. insigne; 3. C. i. Chantini.

PEAR SHOOTS DISEASED: *T. W. O.* The Pear shoots are attacked by "canker" fungus, Nectria ditissima, and also by the "scab" fungus, Venturia pirina. Cut out all the "cankered" wood down to the healthy green bark, and then paint over the wounds with Stockholm tar. Avoid over-manuring the trees, as excessive nitrogenous manuring encourages "canker." To reduce the "scab," spray the trees in February with the copper sulphate solution (1 lb. dissolved in 25 gallons of water). If the fruits have been "scabby," spray the foliage with Bordeaux mixture just before and just after blossoming.

POISONOUS TREES AND SHRUBS: *Doubtful.* Some of the Rhododendrons are reputed to be poisonous, for example, R. maximum. Andromeda polifolia is poisonous to sheep, and so are the species of Kalmia (often called Laurel), hence the common name in the United States of "Lambkill." Yew is undoubtedly poisonous, but its effects are remarkably variable, and seem only to be shown when the animal takes it on an empty stomach. Possibly it is the same with the other plants. The common Laurel is poisonous. Although poisonous, these plants are largely planted, and from the fact that poisoning cases are very seldom recorded, there would seem to be very little danger from them. The Yew affords the commonest instance of animal poisoning in this country. The others are so unpalatable that probably animals would only eat them when pressed by hunger. At the same time it is not advisable to plant them extensively near sheep runs.

ROSE GROWING THROUGH A FUNGUS: *H. S.* The fungus is Polyporus spumosus. It is in not a parasite, but it has sprung from a buried bit of wood and accidentally enveloped the Rose stem.

STERILISED SOIL AND EELWORMS: *W. B. R.* If you will send us examples of the Beans and some of the soil we will examine them.

Communications Received.—J. B. G. R. H. W. R. H. S. I. J. E. T. West Hartlepool L. G. P. O. T. S. C. Wisbech T. S. N. R. P. Northampton J. D. G. M. T. H. S. A. & B. N. D. Framfield W. F. W. H. Y. S. A. R. P. B. E. M. J. D. Great Bookham W. J. J. S. E. Petworth W. W. P. S. & Co. R. A. M. W. P. W. T. H. K. J. B. H. G. N. P. B. Codsall J. E. S. H. A. B. A. D. R. J. R. H. S. T. M. L. de V. France W. K. Aberdeen E. S. S. F. T. B. A. J. A. G. S. E. P. Cape Town J. D. Rochester, N. Y. F. M. T. B. S. Maryland T. S. J. C. N. Clapham T. S. W. P. R. O. S.

THE Gardeners' Chronicle

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FLORENTINE FLOWERS.

FLORENCE in springtime well deserves its epithet of "the City of Flowers."

The picturesque old town, its quaint streets, magnificent palaces and churches all seem wrapped in a mantle of flowers. Everywhere grows the Judas Tree (*Cercis Siliquastrum*), a beautiful thing with an unpleasant name, suggesting by its pink, pea-shaped blossoms a sunrise on the mountains. Great purple plumes of Wistaria, and, later, pendulous bunches of Grapes bedizen every loggia and cover every pergola. Pink and purple—what more is needed? White certainly, and perhaps yellow, not a bright golden-yellow, but a soft deep cream. That would complete the picture in the mind's eye. Look around—there are the Banksian Roses. They are rampant everywhere; they climb the highest houses, the tallest Cypresses. Even their own bright leaves are hidden by masses of tiny flowers like fairy foam.

If the town itself is so full of flowers, what of the country in the neighbourhood? The general visitor does not stop to consider. He is "doing" the place whilst on his way to Rome or the Riviera. There are certain pictures he has been advised to see in the Uffizzi, the Pitti and the Belli Arti galleries. He will certainly see those, but he will not go into the country for the pleasure of gazing on Nature's own pictures. The former are "to be done," the latter to be left unseen.

I have admired the Ghirlandaios, the Fillipo Lippis. I have seen Botticelli's curious figures in "Springtime," and the gold backgrounds of the Fra Angelicos. I can now spare time for a holiday, so will go to look at Nature's own gallery.

From the Ponte a Mensola to Fiesole is a very beautiful walk. The most beautiful route is by the Castle of Poggio, which was the way I went to-day.

During my travels in Italy, it has seemed to me that every farm and every villa has its

own Loquat tree. "It is the same here," I thought as I wandered by the stream which is spanned by the Ponte a Mensola. On each side of the road were the high walls of the Olive yards, over which the grey leaves of the



FIG. 213.—ORCHIS PURPUREA (FUSCA) BEARING A FRESH INFLORESCENCE AND SEED-PODS FROM THE PREVIOUS YEAR.

gnarled trees peered. Those walls even were things of beauty. They were draped from base to summit with Ferns—mostly the Rusty-backed Fern (*Ceterach officinarum*), with its dull green upper surface and rusty-brown scales beneath. Equally common, too, were the Spleenwort (*Asplenium trichomanes*) and the ever-common *Polypodium vulgare*.

In the fields, the Anemones were nearly over. Can Anemones be as fine anywhere as they are in the Florentine fields? They are like Poppies in the fields at home, but great, strong Poppies, which blossom just as the Corn is above the ground, so that the little green shoots show off the multi-coloured flowers to the best advantage. The colouring appears to vary very much according to the locality in which they grow. At Settignano, near d'Annunzio's villa, they are mostly soft blue; out at Certosa, by the monastery, blossom the scarlet ones; in another place, they are nearly white, and, in still another, deep rich purple. Not only do the Poppy Anemones vary in colour, but also others. Up in the high woods, amongst the Primroses, the soft-blue *Anemone apennina* is frequently pure white, and might almost be mistaken for *A. nemorosa* of our own woods, with which it grows. The purple *Anemone pratensis*, which is in size about half-way between the other species, has finished flowering. Down in the Mugnone Valley, on rocky banks, it has been a gorgeous sight.

The Hellebores, both *Helleborus viridis* and *H. foetidus*, are over, but traces left beside the stream show that they have flowered splendidly. The Grape Hyacinths are too swiftly following their example, so are the Tulips.

Until I first saw Tulips growing wild I did not admire them in the least. I had always considered them stiff and ungraceful. Yet how splendid they are in their native state among the sprouting Wheat! Three kinds grow here. My favourite is the dainty little Lady Tulip (*T. Clusiana*). The plant is now seldom to be met with here, though it is still occasionally seen in rarely-trodden paths.

The fields are past. We are now up in the woods, the beautiful Cypress forest of Vincigliata. Mrs. Browning described the Cypress as resembling "black flames." That, too, was an apt description, but I think "black spears" is more apt, for the Cypress branches seem to pierce the sky.

Under the Cypress, the Orchids are happiest, just as they are under the Aloes on the Mediterranean coast. There is a thick, matted scrub of Heather, Myrtles and Juniper, in the clearings of which the Orchids blossom freely. There are masses of the Spider Orchid (*Ophrys aranifera*) with long flower-stalk and conspicuous ripening seed-pods. Here the Spider Orchids flower in early April, so that in May they appear as if quite overcome by the heat. That pale yellow one is *Orchis provincialis*. The flowers seem to have followed out the colour scheme started by the



FIG. 214.—CEPHALANTHERA ENSIFOLIA BEARING FLOWERS AND SEED-PODS.

oblong, pointed leaves, for they have the same little brown spots over them. *Orchis purpurea* (*fusca*) (see fig. 213) looks very lordly. The flower-stem, bearing blossoms with mulberry-coloured hoods and bright pink tongues, rises high above the glistening green

leaves. The little Orchis Morio, with its flower-head suggesting a deep purple Hyacinth, though the hoods are streaked with bright green, looks most humble by its side.

The flowers are not at their best near Temple Leader's mock-mediæval castle. Too many parties of Cook's tourists drive there to see the interior, which is full of models of Cinque Cento furniture. We will not turn off to the left, as the smart carriages do on their way to Fiesole, but will go on past the real old



FLORENTINE FLOWERS.

FIG. 215.—SERAPIAS LINGUA.

Castle of Poggio and reach Fiesole by the longer and infinitely more beautiful road. But little traffic goes that way: just a few carts drawn by calm, cream oxen, and little dark-eyed children of the contradini, who dash up demanding "Un soldo, signor."

Up to Poggio, from whence the many towers of Florence, the Duomo, Giotto's Campanile, the Palazzio Vecchio, with the silver thread of the Arno flowing between, are plainly visible in the valley, backed by the green hills. There the Orchids are at their best.

Has it ever struck the reader what a particularly horrible combination are purple and yellow? Let him try it in any paint or material he likes and see for himself. Yet look at those flowers there, the Meadow Orchid and the Orchid of Provence, deep purple and bright primrose-yellow. How well they look growing in the great drifts. They teach us a lesson as to the marvellous way in which Nature mixes the colours on her palette, and we realise how seldom she makes an error in the colouring of her groups. Ere they fade they are followed by crowds of Serapias lingua (see fig. 215), which the Ligurians appropriately call Hen's Mouth, though the botanical books name it the Tongue Orchid.

But what is that? An Ophrys certainly—but which? The flowers are large, though they are but few, and their colour is bright rose. The lip, too, is large—almost too big for so small a plant—oval, with three velvety lobes of a dull, greenish brown, spotted and striped with purple, with here and there a faint suggestion of cobalt-blue: the appendix is very small. It must be Ophrys Bertolonii. A distinctly interesting discovery, more interesting indeed than those delightful little Bumble-bees (Ophrys bombylifera), which I found in the park of Petraja. Later on come Ophrys Arachnites (see fig. 216), which somewhat resembles the Bee Orchis, but possesses a larger and very conspicuous appendix.

A little further along in the deep shade is another species, but this is easy to identify. The Monkey Orchis (Orchis Simia) can be distinguished because the flowers commence to open at the top of the stem instead of at the bottom. The petals are much finer and more curving, and it has several other points which vary, but the point of the opening of the flowers is the simplest. The lovely white spike of Cephalanthera ensifolia (see fig. 214), often mistaken for C. pallens, a common species at home, yet rarer here, appears from the mass of green.

A little further on, the forest has been cleared for some distance, for the people, with short-sighted policy, cut down the big trees which gave so much shelter, and in their place planted Olives. Many flowers are blossoming happily under the gnarled bowls of the Olives. The double Daffodils are over, but the bunch and the Poet's Narcissus (N. Tazetta and Poeticus) scent the air. The tasselled heads of Muscari comosum are in perfection, but M. botryoides is over, as are the Stars of Bethlehem. The Scillas are looking lovely; in the grass, shine the little lilac-blue heads of S. verna, and with them the somewhat coarse pyramids of S. italica, which now and then covers whole fields. Irises are blossoming on the wall-tops, but the Snake's Head Iris (I. tuberosa), which delighted me so much in March, has gone with the winds.

As we reach the Cypress forest and the main road again, the flowers diminish, and soon we arrive in Fiesole, with the straw-platters strolling about busy at their work, or sitting in the courtyards at the quaint old looms, the villas of the wealthy English and Americans, draped in Wistaria and Roses, and the gaily-dressed crowds taking tea outside the Aurora, looking down into Florence, from whence the electric trams climb the hill. W. Herbert Cox.

SOUTH AFRICA.

PHYLOXERA.

In the issue for October 22 there appeared the following paragraph regarding the Phylloxera restrictions at the Cape: "We cite this example, not because of its intrinsic importance, but because it happens to be the most recent." This statement is somewhat misleading, seeing that the regulation referred to was promulgated over 20 years ago, when Phylloxera was first discovered here and endeavours were being made to eradicate the pest. It is still in force. The Government, however, reserves to itself the right to import vines from overseas at any time. *Eustace Pillans, Department of Agriculture, Cape of Good Hope.* [In speaking of the Phylloxera restriction as the most recent example of prohibition of importation of plants, we intended to refer not to the enactment of the law, but to the recent notification of its existence.—Eds.]

VEGETABLES.

EXTENSIVE CULTURE OF SEAKALE.

As showing how much the cultivation of Seakale has extended, it may be stated that Messrs. S. Bide & Sons, Ltd., Farnham, have 36 acres of land devoted to this crop at Farnham and in Lincolnshire. I remember, some years ago, seeing an acre of Seakale at Frogmore, and I thought how extensive was the growth of this vegetable for forcing purposes in the Royal gardens. Just imagine what 36 acres mean in the number of roots that area will produce: 20,000 plants are required to plant one acre, making a total of 720,000 for 36 years! This is an enormous quantity from one grower, and its cultivation entails much care and labour, a great amount of manure, and land specially adapted for its successful growth. Men of experience are required in the grading of the five classes of roots into which they are drafted, namely, Extra Selected, First Forcing, Ordinary Forcing, First-size Planting and Second-size Planting. Thorough preparation of the land is an important point in cultivation. Behind the plough a subsoiler is employed, which loosens the pan of soil below, rendering the percolation of water from heavy rains much easier. Planting is done in April. The thongs or pieces of root 6 inches long are first tied in bundles of 50 and laid in the ground,



FLORENTINE FLOWERS.

FIG. 216.—OPHRYS ARACHNITES.

being made airtight to induce the crown to callus. When the purple hue next the skin on the top of the root is visible, then is the time to plant, which is carried out by means of a dibber, just burying the crowns under the surface. As soon as growth is well started, the shoots are dis-budded to one on each crown, reserving, of course, the most promising shoots. The ground is kept scrupulously clean during the summer, and the surface is stirred repeatedly. The varieties number three, the ordinary purple Seakale, Lilywhite, and Beddard's Improved or Solid Ivory. E. Molyneux.

CALYSTEGIA DAHURICA.

THOUGH not commonly cultivated and very little known, this species is a beautiful plant, and is as easily grown as the common Bindweed, to which it is closely related, though I have not discovered that it spreads to the same extent. It will grow up a wall many feet high, and a few years ago, at a spot near Cambridge, known as "Paradise," it formed a beautiful covering over the whole side of a house. *Calystegia dahurica* is figured in the *Botanical Magazine* as *Convolvulus dahuricus*, vol. 53, tab. 2609, and in the *Flore des Serres* (tab. 1075) under its present name. It is of the same habit as its beautiful white ally, the common White Bindweed, and, when not in flower, might be mistaken for it, but there is a coloration of the stem which often accompanies coloured blooms. The species is conspicuously distinct in its rose-pink flowers, the throats of which are white with five white radiating lines; but it is distinguished also by having the bracts of the flower proportionately broader and less acuminate, and by the possession of slightly hairy petioles and peduncles. Beside these differences, the nerves below are also very slightly hairy. The peduncles, further, are four-angled, and this character is the most absolute point of distinction. The leaves of the two species indeed are similar in appearance, but those of *C. dahurica* are usually narrower and more definitely pointed, being in fact acute or even acuminate, while those of *C. sepium* are usually obtuse though sometimes acute. I am indebted to Mr. E. J. Allard, now of the John Innes Horticultural Institute, for the photograph (see fig. 217), which was taken in the Botanic Garden, Cambridge. *R. Irwin Lynch.*

THE ALPINE GARDEN.

SAXIFRAGA CRUSTATA.

It is not surprising that the above name should have been given to one of the encrusted Rockfoils, but several species belonging to the section are much more encrusted with lime than this one. The linear leaves are slightly widened and very blunt at the tips, and this portion, extending downwards, sometimes for half the length of the leaf is free from lime and of a rich, glossy, dark green, except at the edges which are correspondingly bright and silvery, thus producing a pleasing contrast. The plant has a cheerful appearance during the winter months, when evergreen subjects on the rockery are highly desirable, particularly those with the neat habit of the encrusted Saxifrages. As a species, its position lies between *S. cochlearis* and *S. aizoon*, or some of the narrow-leaved forms of the latter, notably *S. A. pectinata*. The latter has very grey foliage at the present time, so that *S. crustata* may readily be distinguished from it by the characters above given, and by the fact that the leaves are finely crenate on the margins, whereas *S. A. pectinata* belongs to the group having serrated leaves. The rosettes have very short stems in the species under notice, and for that reason make very compact tufts of foliage. The flowers are white and marked with a variable number of red specks, but they are not numerous, by comparison with those of *S. cochlearis*. *J. Fraser.*

HORMINUM PYRENAICUM.

WHILST looking through a fairly reliable work on Alpine plants the other day, for the purposes of review, I was startled to find a remark made about *Horminum pyrenaicum* to the effect that it is "not a plant of easy culture." This is exactly contrary to my experience of well-nigh 30 years of the cultivation of this Alpine plant. But I am in entire accord with the accompanying remark in the work referred to that it is "not a plant of much value or interest." Yet it is so frequently offered in catalogues, that those

who observe the name may like to know something about it and its ways, and how it can be cultivated. To begin with, it is by no means specially pleasing with its spike of sparsely-arranged labiate flowers, about 9 inches or a foot high, raised from among a dense plant composed of longish, rough, wrinkled leaves, the spikes being even less plentiful than the dull-purple flowers. This is, indeed, one of the most marked deficiencies of the plant, and it is one which cannot be overcome. Yet it does produce flowers if cultivated in a place which is not too dry, yet not soaked with water. Nowhere does it do so well with me as on a level spot at the base of the rock garden. Probably, a good deal of the disappointment experienced with *H. pyrenaicum* is due to the fact that its preference for calcareous matter in the soil is not satisfied, although this is easily supplied by means



FIG. 217.—CALYSTEGIA DAHURICA: FLOWERS ROSE-PINK, WHITE IN CENTRE.

of some old mortar if limestone is not available. Yet it will shrivel up if this calcareous material renders the place too dry—at least, this is my experience.

But even with all the care we can give it, I confess that I cannot well understand the statement of an eminent Continental authority on Alpine flowers, who informs us that it bears "un épi de fleurs grandes." "Fleurs grandes" they are not, and I must demur to this enthusiastic estimate of their size.

The white-flowered variety of *Horminum pyrenaicum* is not a whit better, although scarcer, and I care little for it. Propagation is effected by means of division or seeds. Division may be performed at any time, and the seeds should be sown under glass in spring. *S. Arnott.*

CULTURAL MEMORANDA.

SCHIZANTHUS.

THE *Schizanthus* is one of the most useful of flowering plants for greenhouse and conservatory decoration on account of its light, graceful habit, its wonderful floriferousness, and the wide range of colours in the blooms. Plants may be had in flower nearly all the year round, but they are especially valuable in spring time. The cut blooms are valuable for dinner-table decorations. August is soon enough to sow seeds for plants intended to flower in spring. They should be sown in pans or boxes, and placed in a cold frame to germinate. The seedlings should be transplanted when large enough to shift, placing four in a 3-inch pot. The pots in which they are grown should be placed on a shelf in a cool house. As soon as the seedlings are well rooted they should be shifted into 6-inch pots, using a compost consisting of two parts loam and one part leaf-mould, with the addition of a little silver sand or road grit. Endeavour to promote a sturdy, vigorous growth, and pinch out the tips of the shoots to induce a bushy habit. Dwarf sorts, such as *Wisetonensis* and *retusus*, will not need larger pots than those of a diameter of 6 inches, but such free-growing kinds as *pinnatus* may be potted into 10-inch pots to form specimens 8 feet high. Large plants such as these are especially useful for placing in corridors. Do not pot the plants too firmly, as this is detrimental to their free growth. When the plants have been freshly potted afford water with care, it being advisable to keep them a little on the dry side until they are well rooted. Although it is desirable to allow plenty of ventilation, the plants are liable to attacks of mildew if fresh air is carelessly admitted. Should mildew appear, fumigate the house with sulphur. It is beneficial to syringe between the pots on bright days, and a light spraying overhead in the afternoon is often advantageous. When the pots are filled with roots a light dressing of some suitable fertiliser should be given occasionally. Soot water and farmyard liquid manure are valuable stimulants, and they may be mixed together. The *Schizanthus* makes an excellent basket plant. *J. Gardner, Batsford Park Gardens, Moreton-in-Marsh.*

TREES AND SHRUBS.

THE EUROPEAN BLACK POPLAR.

THE *Populus nigra*, of Linnæus, is a very scarce tree at the present time in British gardens and plantations, where its place has been usurped by the Black Italian (*P. serotina*), reputed to be a hybrid between the European and the American Black Poplar (*P. deltoides*). Being the result of a first cross, the Italian Poplar possesses enormous vigour, and grows with remarkable rapidity. This fact weighs with many people, who plant it in situations, where it has to be severely lopped or even topped in the course of a few years. It is really a forest tree, and should be planted only for timber or in large parks, where there is plenty of room to develop. The European Black Poplar grows more slowly and produces a wealth of twigs and foliage by comparison with its congener. For this reason, I would give it the preference, where Poplars are desired in confined areas. Many people are fond of this class of tree, judging from the frequency with which the Black Italian occurs in gardens of quite limited dimensions. This taste could well be served by the European Black Poplar, because, although the leaves are smaller, they are twice as numerous in a given space, especially on young trees, and equally so at the extremities of the branches of old trees. In the course of observations in four counties during the past season, I have noted only four patriarchal trees of *P. nigra*, and one of them at least was *P. nigra* var. *betulifolia*, and seven or eight trees of smaller dimensions, most of them being relatively young. *J. Fraser.*

The Week's Work.

THE HARDY FRUIT GARDEN.

By A. R. SEARLE, Gardener to the Marquis of Northampton, Castle Ashby, Northamptonshire.

Hardy vines.—If Grape vines are grown out-of-doors for the production of Grapes, or for the effect of the highly-coloured foliage in autumn, an annual system of pruning is necessary. This pruning may now be carried out by means of a very sharp knife. The lateral growths should be cut back to two buds, and the leading growths required for extension or for replacing older rods should be cut back to within 2 or 3 feet from their base. In order to prevent bleeding, a little painters' knotting should be applied on the cut surfaces. Whilst the canes are loosened from the supports, they should either be washed with Gishurst Compound, or painted over with a mixture of flowers of sulphur and soot, using equal portions of each, as a preventive of both red spider and mildew. The walls should be syringed with a similar mixture. If it is desired to propagate any of the varieties, it will be necessary to select well-ripened shoots for this purpose. These shoots should be cut into short lengths, holding three or four buds each. Remove the lower one with a clean cut, and insert the cuttings singly into 4-inch pots filled with good loam and a liberal sprinkling of sharp sand. Make the cutting quite firm in the pot, and plunge the pots in the open border about 1½ inch below the level of the surface soil. They may remain there until next planting season, and, at that time, they may be planted in the requisite positions.

Raspberries and Blackberries.—If the old fruiting canes were cut out soon after the last crop was gathered, the best of the new canes may now be fastened securely to the wires or stakes, cutting out all the weak canes and any above the number required to thinly furnish the supports, taking every care to prevent overcrowding. When the training is completed, the surface soil should be lightly pointed over with a fork, then apply a liberal mulch of decayed farmyard manure. Loganberries and Blackberries may be treated in a similar manner.

General work.—Examine the grease bands on the tree stems occasionally, and smear with fresh grease any that require this attention. The cleansing of trees should be pushed forward without delay, so that it may be completed early in the New Year. All trees affected with mussel or brown scale should be sprayed with the caustic soda solution, choosing a calm day for the operation, and taking care to wet every part of the branches. Ventilate the fruit-room on all favourable occasions, examine the fruit frequently, and remove any that show the least signs of decay.

THE KITCHEN GARDEN.

By JOHN DUNN, Kitchen Gardener Foreman, Royal Gardens, Windsor.

Mushrooms.—Collect sufficient horse-droppings for making successional beds and place the droppings in a dry, open shed, where they can be turned frequently before they are removed to the Mushroom house. They should be allowed to remain in the house for a few days before they are made firm by ramming. The beds at this season should be at least 15 inches in depth, so that they may retain heat for as long a time as possible after spawning, which should take place when the temperature of the bed is at about 80°. The atmosphere of the house from which supplies are being gathered should be kept as near 55° as possible; very little water will be necessary beyond damping the floor and walls of the house when the surfaces become dry.

Cauliflower.—A sowing of some early variety of Cauliflower may be made as soon as possible, especially if the stock of autumn-sown plants is limited. The seed may be sown either in boxes and placed in a greenhouse, or on a prepared bed in a pit. In the latter case the bed should be near to the glass, and the seed should not be sown too thickly or spindly plants will result. When the seedlings are large enough to be handled, they may be transplanted into boxes or frames, putting them at 2 inches apart. A little later, they may be potted into large 60 pots (3 inch pots), this being the best means of prevent-

ing a check occurring when the plants are put out in April. Early Market and Magnum Bonum are good varieties for this sowing.

Seakale.—The present is a good time to make preparations for raising next season's plants by making cuttings from portions of the roots which should be selected when the crowns are lifted for forcing purposes. These cuttings should be 6 or 7 inches long and as clean and straight as possible. They should be laid on the ground in a horizontal position and covered with 6 inches of sandy soil until the beginning of April, when they will have made sufficient growth to enable the cultivator to plant them in their growing quarters. Seakale delights in a deep, rich soil, and this should be trenched and prepared as soon as possible for those plants intended for forcing in pits or houses. A distance of 2 feet should be allowed between the rows and 15 inches from plant to plant.

Rhubarb.—The ground for this crop should be trenched as soon as possible, and a good dressing of farmyard manure thoroughly mixed with it as the work proceeds. Planting may take place in the month of March, if the weather is favourable at that time.

Potatos in pits.—The first planted Potatos will now be showing above the ground. The pits should be freely ventilated during mild weather to keep the plants from becoming drawn; the temperature should not exceed 45° at night with a little air. Another plantation should be made at once, so that an unbroken supply may be obtained from the time when lifting begins. Water should be applied only very sparingly, and the first watering should not be necessary until the plants are a few inches high, provided the soil is moderately moist at the time of planting.

Early Peas.—A sowing of some approved early variety may be made at once. The best and safest way is to sow the seeds in small pots, placing the pots in a cold pit until March, when the young Pea plants should be carefully planted on a warm, south border. In the meantime, care must be taken that they do not become drawn, owing to insufficient ventilation. Where large supplies are necessary, a sowing may be made on a south border as early in the year as the state of the weather will permit.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower to Sir Trevor Lawrence, Bart., Burford, Surrey.

Calanthe, Phaius and Phaiolobos.—The early-flowering varieties of the *Calanthe vestita* section, and their hybrids form the principal attraction in the Orchid houses at this season. When the plants have done flowering and the flower-spikes are removed each pseudo-bulb should be thoroughly cleared of the white and brown scale insects which frequently infest them. As these plants require a period of rest, they should be placed close to the roof glass on a dry shelf, free from drip, and they will not need any water until after they are again repotted in the spring. As they come from very hot countries, the plants should be kept in a warm house or pit during the resting period. The late-flowering varieties, as *C. Regneri*, *C. Stevensii*, *C. Sanderiana*, and others like *C. Turneri* and *C. nivalis*, are sending up their flower-spikes, and will require to be kept moderately moist at the root till the flowers open. *C. veratrifolia*, *C. Sanderiana*, *C. Masuca*, *C. Cecilia*, and *C. Dominiana* are now in full growth, and should be given a rather shady position in the Cattleya house. Afford the plants plenty of water at the root, damp well between the pots several times each day, and apply an occasional spraying overhead with tepid rain-water. The Japanese sorts, as *C. japonica*, *C. citrina*, *C. discolor*, and *C. tricarinata*, which are now making growth, succeed better in the extra warmth of the Cattleya house during the winter months, but in summer they prefer a cool, intermediate house temperature. Such species as *Phaius bicolor*, *P. Sanderianus*, *P. Wallichii*, *P. Mishmensis*, *P. Blumei*, *P. grandifolius*, *P. flavus*, *P. maculatus*, and the new *P. Cooperi*, also the hybrids *P. Cooksonii*, *P. Normanii*, *P. Martiana*, *P. anabilis*, *Phaiolobos Calanthe Arnoldii*, *P.-C. irrorata*, *P.-C. Sederiana*, and *P.-C. Colmanii*, should also be grown in a shady position

in the Cattleya house the whole year round. These evergreen plants, being in full growth at the present time, require liberal supplies of water. Some few are already showing their flower-spikes, and after these fade, the plants will need a short rest, but even then the compost must not be allowed to become very dry. The plants may be potted when they recommence to grow, if this is necessary; they require a well-drained compost of fibrous, yellow loam, *Osmunda* fibre, and *Sphagnum*-moss cut up moderately fine and mixed well together, potting them like any ordinary greenhouse plant.

Vanda.—*V. Watsonii* grows well at the cool end of the Cattleya house, and is now in bloom with fine spikes of pretty white flowers, which last a long time in perfection. During the growth of this species, the surface moss should be kept in a freely-growing condition, but after the spikes are cut the water supply should be lessened, but not greatly so, or the lowermost leaves will shrivel and fall. *V. Kimballiana* should receive similar treatment. *Vandas* of the *V. tricolor* section now growing fast should be kept well supplied with water, principally on the surface of the moss, and any recently-potted plants that show flower-spikes before they are well rooted should have the spikes removed. Admit plenty of fresh air. Keep their surroundings always moist, and entice as many of the new roots down into the compost as possible.

Catasetum, &c.—Such deciduous Orchids as *Catasetum*, *Cynoches*, and *Mormodes* require a decided rest in the warm house, and as soon as the leaves turn yellow and begin to fall, the plants should be kept well on the dry side; if the pseudo-bulbs have been properly ripened, they will need only a very little water for several months.

Chysis.—The different species of *Chysis* and their hybrids rest well in the Cattleya house if kept moderately dry at the root. When growth recommences, do not afford water too soon, but keep the compost rather dry till the flower-spikes are seen pushing up with the new growths.

Thunia.—Keep the *Thunias* at rest with the *Dendrobiums* in the cool resting-house. These plants have now lost their leaves, and the old pseudo-bulbs being shrivelled and useless, they should be cut down at the base or pulled out of the pot; then tie the stems of the current season clear of each other, so that each will be exposed to the light. At the present time there is very little potting to be done, therefore a good opportunity is afforded for the grower to overhaul the entire collection, and to clean and re-arrange the plants. Clear the remains of old flower-spikes from each plant, tie up any loose or straggling growths, wash the leaves, and remove mealy bug and scale from the pseudo-bulbs. In re-arranging the plants, see that the larger specimens are not allowed to shade the smaller ones.

Odontoglossum.—The *Odontoglossums* are now sending up many flower-spikes, and the plants should be constantly examined for slugs. Wrap a piece of wadding around the spikes of valuable plants, and set baits of Potato, Apple, or green vegetable. Apply beetle poisons in the warmer houses for cockroaches and crickets.

FRUITS UNDER GLASS.

By B. GOODACRE, Gardener to Sir Ernest Cassel, G.C.B., Moulton Paddocks, Newmarket.

Late Grapes.—The Grapes should now be cut from the vines, and those not required for immediate use preserved in the usual method by means of bottles of water, placing a few pieces of charcoal in each bottle. Arrange the bunches so that they hang clear from each other and the glass. The fruit-room in which they are stored should be dry, free from draughts, and not colder than 40°. Directly the Grapes are cut, the vines may be pruned, cleaned, and made ready for starting afresh.

Pot vines.—When the plants show signs of growing, raise the temperature of the vinery, and, when the leaves begin to expand, maintain a night temperature of 55° to 60°. The warmth of the house should, to a certain extent, vary in accordance with the weather conditions outside, remembering that it is better to avoid using excessive fire heat, especially at night time, as it

tends to weaken the growth and encourages insect pests. When the shoots have made a growth of about 2 or 3 inches, unfasten the canes, and arrange them in their proper positions on the trellis. Continue to spray them freely once each day with tepid water whenever the weather is favourable, until the vines are in flower. Do not disbud many of the shoots until it can be determined which are carrying the best inflorescences. On every opportunity, when the conditions permit, admit a little fresh air, as a confined and close atmosphere would cause the young shoots to become weak and flabby.

Early vinery.—Vines which were started last month will soon be breaking into leaf. Add fresh materials to the hotbed occasionally, so that it may continue to give off a gentle heat and moisture until the vines are well started.

Cucumbers and Melons.—Seeds of Cucumbers and Melons may be inserted for raising batches of plants for early fruiting. Sow the seeds singly in small pots, and plunge the pots in a brick bottom heat. The houses in which early crops of

THE FLOWER GARDEN.

By E. BECKETT, Gardener to the Hon. VICARY GIBBS, Aldenham House, Hertfordshire.

The shrubbery.—I would again urge the inclusion of some of the choicer shrubs instead of duplicating uninteresting clumps of such sorts as Yew, Box, and Laurel, although these species should be given their place in proper proportion, being specially serviceable for planting in sunless positions, or in the shade of trees, or for screening unsightly buildings. There is a wide selection of hardy shrubs that will succeed in any part of the country, and they may be procured at a reasonable cost. Straggling plants of any common shrubs should be cut down, and the roots grubbed up, taking the opportunity thus provided to improve the soil by trenching it, and, if it is of a heavy nature, working in plenty of decayed leaves, and other vegetable refuse. In soils of a cold, retentive nature it is desirable to form beds above the level of the surroundings, and carry out the planting only when the ground is in a suitable condition. It is essential to observe this when

including *B. v. magnifica*, *B. v. Veitchii*, and *B. v. Wilsonii*.

Hamamelis mollis.—This beautiful shrub is now unfolding its delicate, yellow flowers. It is much the best garden species of *Hamamelis* that I know, for it possesses the largest and finest-coloured flowers, whilst the large leaves are very attractive in summer time. Being of somewhat slow growth, the plant should be given a favoured situation, although it is quite hardy.

General work.—Get in a state of readiness plenty of dry litter or other material suitable for protecting tender plants from excessive cold, as the weather is almost sure to set in frosty after the turn of the year. In the event of snow falling, see that it does not accumulate on the choice evergreens, or the weight may cause some of the principal branches to break. Violets in frames should be examined, removing dead or decaying leaves and loosening the soil. Afford water to the plants with care, but in most cases moisture will be necessary in the case of those plants nearest the hot-water pipes. Ventilate the house freely on every suitable occasion, and see that the glass is thoroughly clean. It frequently happens that, when frames containing plants are covered up for some time, rats and mice become troublesome, for, when pressed by hunger in cold weather, these rodents will devour plants and almost anything else.

PLANTS UNDER GLASS.

By JOHN DONOGHUE, Gardener to JOSEPH PICKERSGILL, Esq., Bardon Hill, Westwood, Yorkshire.

The Conservatory.—Cyclamens are now effective, and the flowering may be prolonged if a light dressing of some fertiliser is applied to the roots. The Paper-white Narcissus has furnished a bright display of flowers, and this batch may be followed by the variety *Cervantes*, which is one of the best sorts for flowering at Christmas time. The blooms resemble those of an early type of Trumpet major, but the plants are more reliable, and flower with greater freedom. Another useful Narcissus for forcing is the variety *Golden Spur*, which generally comes into bloom about the second week in January, thus providing a succession. The forced Tulips such as *Duc van Thol* have been very successful, and *Proserpine* and *Montrésor*, which is almost ready for cutting, will be succeeded by *Vermilion Brilliant*.

Schizanthus.—Plants of *Schizanthus* should now be ready for their final potting, using receptacles according to the size and strength of the individual plants. In most cases those of 8 or 9 inches in diameter will be large enough. They should be thoroughly cleansed and dried before being used, and each should be provided with ample provision for drainage. The compost should be rather lumpy in texture, and it may consist of fibrous loam mixed with leaf-mould, some manure from a spent Mushroom bed, and a little charcoal and sand to keep it porous and sweet. Afford the plants a light position, where they can be freely ventilated, as the *Schizanthus* is a sun-loving plant growing sturdy and robust, and producing blooms of the brightest colours when exposed to sunshine. Some of the varieties, including *S. retusus* and *S. Grahamii*, are useful for furnishing cut blooms.

Lilium Harrisii.—Bulbs of this Lily imported from the Cape are producing an excellent display of showy flowers. Successional batches may be introduced into heat and gently forced. The pots may be filled with a top-dressing of fibrous loam and peat, with which is mixed some dried cow manure. When the flower-buds appear the plants may be further assisted by applications of liquid manure from the farmyard.

Lilium speciosum.—The varieties of *L. speciosum* known as *Melpomene* and *Kraetzerei* should be selected for potting, placing the bulbs low in the pots, as previously recommended in the case of *L. Harrisii*. Place the pots in a cool greenhouse until the bulbs commence to grow. Take measures to destroy aphids, which are a troublesome pest to most species of *Lilium*.

THE SAXIFRAGAS OF THE MARITIME ALPS.

In a note from the well-known French botanist, Dr. A. ARBOST, he states that *S. lingulata* var. *Bellardii* grows naturally in wet situations, and that *S. lantoscana* loves dry and hot places.



[Photograph by John Gregory.]

FIG. 218.—CYPRIPEDIUM "GASTON BULTEL": A RICHLY-COLOURED VARIETY WITH ROSE-COLOURED DORSAL SEPAL.

(Received R.H.S. Award of Merit, December 21. See p. 475 ante.)

Melons and Cucumbers are grown are often utilised during the winter for the housing of stove and greenhouse plants: these must now be removed. When the houses are empty, give them a thorough cleansing, paying particular attention to joints in the trellises and other places likely to harbour insect pests. As the scrubbing brush will not reach such places, paraffin should be worked into them by means of a small brush. Prepare the materials for the hotbeds, turning the leaves and manure a few times, at intervals of five days or so, before treading or beating them firmly into beds. Place the soil in position to become warmed to the same temperature of the house, before the plants are inserted.

Tomatos.—Sow seeds from this date, at intervals, for successional batches, using pans filled with light soil and placing them in a temperature of 65°. Do not allow the seedlings to become drawn or spindly which commonly occurs with seedling Tomatos that are neglected.

planting small specimens. In the case of large shrubs, holes should be made sufficiently large to accommodate all the roots. Directly planting is done, see that proper stakes are provided such as will keep each specimen in a rigid condition.

Choice shrubs.—The following shrubs have been added to the collection at Aldenham during the past few years, and, until the present, all have proved hardy and satisfactory:—*Berberis Wilsonæ*, *B. Gagnepanii*, *B. acuminata*, *Cotoneaster humifusa*, *C. rugosa* *Henryi*, *C. applanata*, *Davidia involucreata*, *Deutzia discolor* *major*, *Hydrangea alba grandiflora*, *Ilex Pernyi*, *Cocculus heterophyllus* (a climbing species), *Clematis nutans*, *C. Armandii*, *Spiræa Wilsonii*, *S. Henryi*, *S. Veitchii*, *Stranvæsia undulata*, *Viburnum coriaceum*, *V. rhytidophyllum*, *V. Henryi* (very effective when in fruit), *Decaisnea Fargesii*, *Lonicera Maackii*, *L. pileata*, *Populus lasiocarpa*, *Symphoricarpos mollis*, *Rosa Morgesii*, and many beautiful forms of *Buddleia variabilis*,

EDITORIAL NOTICE

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, as well as specimens of plants for naming, should be addressed to the EDITORS, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Special Notice to Correspondents.—The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

Local News.—Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Illustrations.—The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c., but they cannot be responsible for loss or injury.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editors to see.

SALES FOR THE ENSUING WEEK.

MONDAY AND FRIDAY—

Herbaceous and other Plants and Bulbs, at 12; Roses, Azaleas, &c., at 1.30; at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

WEDNESDAY—

Border and other Plants and Bulbs, at 12; Roses, at 1.30; Palms and Plants, at 5; Japanese Lilliums, at 2.30; at 67 & 68, Cheapside, E.C., by Protheroe & Morris.

FRIDAY—

Imported and Established Orchids, at 67 & 68, Cheapside, E.C. by Protheroe & Morris.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich—39.2°.

ACTUAL TEMPERATURES:—

LONDON.—Wednesday, December 28 (6 P.M.): Max. 39°; Min. 28°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—Thursday, December 29 (10 A.M.): Bar. 30.2; Temp. 45°; Weather—Fair.

PROVINCES.—Wednesday, December 28: Max. 48° Ireland West; Min. 37° England East.

The Passing Year.

The publication of the present issue marks the close of a year memorable to this country for the death of its greatly-beloved sovereign King Edward VII.—the Peacemaker. We recall the fact that this national calamity happened at the commencement of the season, with a suddenness that convulsed the whole Empire. Horticulturists, in common with other loyal subjects of his late Majesty, were led to cancel certain public appointments and postpone others, for his death cast a gloom over all. King Edward's memory will be held in affection by gardeners, for the personal interest he showed in the management of his private gardens at Sandringham and the State gardens at Windsor. His general interest in horticulture was testified also by his patronage of the Royal Horticultural Society, and particularly by his gracious act in opening the Society's new hall at Westminster in the presence of Queen Alexandra and other members of the Royal family.

THE HARDY FRUIT CROPS.

In some respects the horticultural crops of the year 1910 have not been altogether satisfactory. The reports upon hardy fruits furnished us by correspondents in all parts of Great Britain and Ireland were amongst the most disappointing we have published for many years. Apples, Pears, Plums, and Cherries, but particularly Apples and Pears, were greatly deficient, and cultivators generally experienced something very nearly approaching a fruit famine. The only crops that amounted to average yields

were those generally termed small fruits, such as Currants, Gooseberries, Raspberries, and Strawberries. The summer was characterised by dull, sunless weather and low temperatures, and these conditions must certainly have had some influence in determining the crops. At the same time, the unfavourable conditions which obtained in 1909 must be borne in mind, for the summer in that year was not remarkable for much sunshine. In our issue for December 25, 1909, we had occasion to refer to this aspect of the season, expressing the opinion that the failings of the season of 1909 would have a bad effect on the fruit crops in the following year, owing to the trees and buds being less well-ripened than usual. The fruit crops are, in this respect, very different to the annual vegetables of the kitchen garden, which, to a much larger extent, are merely dependent upon the atmospheric conditions of the season in which they are cultivated. In view of these facts, it should afford cultivators some consolation that the weather in September and October was drier and brighter than that which prevailed during the summer months; therefore the conditions prevalent in the early autumn were such as are calculated to produce fruitfulness next season. Most of the vegetable crops were satisfactory, particularly the root crops and the various sorts of Brassica, but the unusually moist atmosphere caused disease to develop in Potatoes early in the season.

ROYAL HORTICULTURAL AND KINDRED SOCIETIES.

The Royal Horticultural Society has not only held its usual fortnightly meetings, but also large summer exhibitions in the Temple Gardens and at Holland Park, Kensington. In connection with the latter event, it may occur to our readers that the Society was allowed the use of the Holland Park grounds last July, on the understanding that the privilege could not be granted in the future. In these circumstances, the thanks of the Fellows will be accorded to Mary Countess of Ilchester for the great kindness and favour she has shown the Society for some years past. The ample room available at Kensington has enabled the Council to arrange for exhibitions which were remarkable for larger groups than are possible in the restricted spaces at the Temple, whilst the privilege of inspecting the private gardens has always been an additional attraction of these shows. In the autumn, the Royal Horticultural Society revived the annual exhibition of British-grown fruits by holding a display which was satisfactory for such a season as 1910, and this was followed first by an exhibition of vegetables and later by a show of Colonial fruits in which British Columbia exhibited such a magnificent display of Apples as London has never before witnessed. Various improvements have been carried out at Wisley, including the building of an Orchid house and the making of proper provision for housing the young gardeners. Three volumes of the Society's *Journal* have been published, and the Narcissus Committee has issued a revised system of classification for Daffodils to supersede a scheme which, published in 1909, failed to obtain the general approval of those most interested in this popular flower. The number of Fellows has in-

creased, and the Society continues to enjoy a most satisfactory measure of prosperity. On behalf of our readers we offer congratulations to the esteemed President, Sir Trevor Lawrence, who celebrated his 79th birthday yesterday.

Turning from the premier horticultural society to the special societies, we find that the efforts of the parent society for spreading horticultural interests have been supplemented by a great amount of strenuous work. The National Rose Society has again increased its prestige and power by enrolling nearly 800 new members and by adding £250 to its reserve fund, notwithstanding the large amount of money now expended upon publications and upon three competitive exhibitions. The National Sweet Pea Society has added £50 to its reserve fund. Its various committees have done useful work in judging and classifying new varieties and in offering advice to Sweet Pea cultivators upon the important question of discarding certain sorts which are no longer desirable, owing to the advent of novelties possessing superior qualities. The National Chrysanthemum Society has held two successful exhibitions and a conference, and there are indications that those responsible for the management of the affairs of this old-established Society will succeed in improving its prospects. The National Dahlia Society, National Carnation and Picotee, National Auricula and Primula, and the Perpetual Flowering Carnation Societies have held exhibitions of the various flowers in which they are interested, and the National Vegetable Society has held its first annual show. The report of this new Society, presented at the annual general meeting, showed that a large measure of support has been obtained for the purposes the Society seeks to promote; various trials have been conducted, and, if these have been subjected to some criticism, nevertheless, they are sufficiently valuable to indicate that the general lines on which the Society is managed are such as will commend it to the favourable consideration of the public. The exhibition was a very satisfactory display for a first effort, and it may be improved upon when the Society is placed in a position of greater independence. One new "National" has been promoted during the year. This is termed the National Hardy Plant Society, but its purposes appear somewhat indefinite. The title is sufficient to include every flowering tree or plant possessing sufficient hardiness to succeed in this climate, but, seeing it has been announced that all annuals are to be excluded from the Society's interests, it may be necessary to modify the title when it is shown that the movement is likely to gain public support.

THE PROVINCES.

Most of the provincial societies have succeeded in maintaining public interest in the exhibitions, particularly those at Shrewsbury, York, Edinburgh, Dublin, Belfast, and Wolverhampton. The horticultural show held in conjunction with the exhibition of the Royal Agricultural Society's exhibition at Liverpool was one of the brilliant displays of the year.

The proposed union of the two leading Scotch societies has not yet been accomplished, but we have reason to hope that the movement

is gaining increased support. Increased horticultural interest has been noticed in the northern counties of England, and the great fruit exhibition and conference held at Hexham, under the auspices of the four most northern counties, was so successful that it is proposed to hold similar events next year, and in 1912 at Carlisle and Newcastle. The Rev. J. Bernard Hall deserves the thanks of all hardy fruit cultivators in those districts for his successful efforts to spread reliable information amongst those directly concerned in the cultivation of the soil.

Our own columns have borne testimony to the desire of the Yorkshire gardeners to possess a powerful society having its headquarters at Leeds. According to present information, every effort will be made to realise this ambition. A committee has been appointed, and steps have been taken to obtain a suitable secretary.

INTERNATIONAL EVENTS.

Amongst the chief events on the Continent, there have been the charming exhibitions of the Dutch Bulb Growers' Association at Haarlem in celebration of the society's jubilee, the horticultural displays at the Brussels International Exhibition, the two international exhibitions at Paris, the Louis van Houtte centenary celebrations at Ghent, and the unveiling of Mendel's monument at Brünn. Horticultural and botanical congresses have been held at Brussels, and Rose and Chrysanthemum congresses in Paris. All these important functions were attended by visitors from this country, and in some cases the Royal Horticultural Society was represented by deputations.

It is a matter for satisfaction that, during the present year definite steps have been taken for holding an international exhibition in London in 1912. On that occasion it is hoped that we may have the privilege of welcoming numerous visitors from all parts of the world, and of showing them the development of horticultural practice in this country. Having written at some length on the subject in a recent issue, we may now merely express the hope entertained by British gardeners that the congress which is to be held in connection with the exhibition will obtain the sympathetic support of horticulturists from every part of the globe.

Reference must be made to the opening of the John Innes Horticultural Institute at Merton, where Professor Bateson is expected to carry out researches which may have a great influence on the future of British horticulture. Such problems as, for example, inheritance, require much time for their elucidation, but they are closely associated with the aims of the breeder and cultivator, and any definite information that is gained concerning them will be welcomed by practitioners.

NEW PUBLICATIONS.

The output of horticultural literature appears to increase each year. Amongst the new journals may be mentioned the *Orchid World*, issued in October last, and the *Journal of Genetics*, referred to in our last issue. The Duke of Bedford and Mr. Spencer Pickering continue to issue valuable reports of the experiments at the Woburn Experimental Fruit Station. The twelfth report possesses unusual interest to cultivators, owing

to the light it sheds on the disease known as "silver-leaf." The most notable amongst the new books is the sumptuous work *The Genus Rosa*, issued by Miss Willmott; this has but few equals in gardening literature; but, unfortunately, its cost will prevent the work getting into the hands of the general public. Amongst other notable books may be mentioned the concluding volume of *The Book of Nature Study*, edited by Dr. Bretland Farmer; a history of *Gardening in England* by Miss Amhurst; Volume V. of *The Trees of Great Britain and Ireland*, by Mr. H. J. Elwes and Dr. Henry; *Agricultural Bacteriology*, by Professor John Percival; *A Handbook of Tropical Gardening and Planting*, by Mr. H. F. Macmillan; *Alpine Flowers and Gardens*, by Mr. S. Flemwell; *Rock Gardens: How to Make and Retain Them*, by Mr. Lewis B. Meredith; and the *Present-day Gardening* series of horticultural books, including volumes on Sweet Peas (H. J. Wright), Pansies, Violas and Violets (Mr. W. Cuthbertson), Daffodils (Rev. J. Jacob), Orchids (James O'Brien), and Root and Stem Vegetables (Alexander Dean).

OBITUARY.

The obituary list is unusually heavy, and it includes the name of Baron Schröder, whose memory will be very jealously kept by every horticulturist in this country. It will be remembered that the Royal Horticultural Society has established a perpetual pensionship in the Gardeners' Royal Benevolent Institution to be known as the "Schröder" pension. Then there are the names of Sir Charles Strickland and Dr. C. B. Plowright, two of our oldest contributors, also such scientists as Dr. J. B. Carruthers, Dr. M. Treub, Professor Hillhouse, George Sharp Saunders, Max Leichtlin, Dr. Theodore Cooke, and William Rogers Fisher.

Ernest Calvat, whose death is a great loss to French horticulture, was one of the most renowned raisers of seedling Chrysanthemums.

The ranks of practical gardeners and nurserymen have been thinned by the deaths of such well-known men as John Simpson, J. McIndoe, R. Wilson Ker, W. J. Nutting, John Garrett, William Culverwell, W. Denning, Henry Cannell, Jun., H. A. Tracy, and Robert R. Mawson.

OUR ALMANAC.—We shall shortly issue a *Gardeners' Chronicle Almanac* for the year 1911. In order to make it as useful as possible for reference, we shall be obliged if Secretaries of Horticultural, Botanical and Allied Societies, or any of our correspondents, will send us IMMEDIATE INTIMATION of all lectures for the coming year.

OUR SUPPLEMENTARY ILLUSTRATION.—Japan and Japanese gardens have been prominently before the public notice during the year that closes to-day, and on more than one occasion in 1910, we have given views of Japanese gardens in their full glory in summer-time. The present Supplementary Illustration shows a portion of the YOKOHAMA NURSERY COMPANY'S ground after a snowstorm. Japan being often referred to as a land of sunshine, people are apt to forget that the country enjoys a climate somewhat similar to our own, with frost and snow in winter. For this reason most of the introduced plants from Japan succeed in British gardens. A reference to the picture shows that the snow has not entirely obliterated the characteristic

scenes in this Japanese garden, for it is easy to recognize the stepping-stone path, stone lanterns, pendulous trees, old and gnarled specimens in porcelain pots, the pool of water with rock-lined margin, and the native building.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Committees of this Society will take place on January 3 at the Society's hall, Vincent Square, Westminster.

"THE BOTANICAL MAGAZINE."—The issue for January contains illustrations and descriptions of the following plants:—

DENDROBIUM DARTOISIANUM, tab. 8352.—This species was originally described in the *Gardeners' Chronicle*, by Mr. WILDEMAN in the issue for June 16, 1906, p. 380. The illustration in the *Botanical Magazine* presents a very showy-flowered plant, the blooms being palest yellow, tinged with rose, and with streaks of purple on the lip. The species is a native of the Indo-China region, but the exact locality has not been determined, although it is said to occur about 1,750 feet above sea level. The plant is grown in the tropical house at Kew under conditions such as are afforded *D. nobile*.

CLADOTHAMNUS PYROLÆFOLIOUS, tab. 8353.—This shrub is a native of Alaska, and although it is said to flower several weeks in succession in summer time it is seldom met with in gardens. The blooms are a suffusion of red on yellow, with bright red stamens. The plant is said to succeed under conditions suitable for *Rhododendron hirsutum*, and it attains a height of from 4 feet to 10 feet.

AQUILEGIA FLABELLATA VAR. NIVEA, tab. 8354.—As represented in the illustration not only the flowers, but the leaves also are very pale in colour. By some authorities the plant is regarded as a variety of *A. siberica*, but as it has shorter stems, larger cauline leaves, and the limb of the petal not much shorter than the sepal, it has been made a distinct species. The plant from which the illustration was prepared was grown in a mixture of loam and peat in Canon ELLACOMBE'S garden at Bitton, Bristol.

ASTER FALCONERI, tab. 8355.—This species was figured and described in *Gardeners' Chronicle*, June 18, 1910, p. 399, fig. 179, from a specimen grown by Mr. WILLIAM MARSHALL, chairman of the R.H.S. Floral Committee, and from a plant growing in the rock garden at Kew.

PHAEDRANASSA CARMIOLOI, tab. 8356.—The *Phaedranassas* are not often met with in cultivation, although *P. chloracra* is sometimes grown in gardens, where it shows considerable difference in the size and colour of the flowers. To this rather variable species, *P. Carmioli* has close affinities. The scape, which grows about 2 feet high, bears about half a dozen decussate, tubular flowers. The funnel portion, representing about two-thirds of the bloom, is scarlet, and the remaining third greenish, with yellow margins. The plant from which the *Bot. Mag.* figure was prepared, flowered in Mr. GUMBLETON'S garden at QUEENSTOWN, Ireland, and is said to thrive in a cool stove. The plant is deciduous, and needs resting after the leaves decay; when growth commences afresh, the flower-spike opens first, although the leaves develop while the plant is still in bloom.

THE SCOTCH RAILWAY DISASTER.—We regret to learn that Mr. ANDREW MAIR, son of Mr. GEORGE MAIR, of the firm of Messrs. G. MAIR & SON, nurserymen, Prestwick, Ayrshire, lost his life in the railway accident which occurred at Aisgill on the morning of December 24. The unfortunate gentleman was 29 years of age.

MENDEL'S MONUMENT AT BRÜNN.—In the issue for October 15, p. 282, we published an account, by Professor BATESON, of the proceedings at the unveiling of the memorial to GREGOR MENDEL, at Brünn. We now reproduce in fig. 219, a photograph of the actual monument.

MRS. G. W. PIPER.—We regret to record the death of Mrs. PIPER, wife of Mr. G. W. PIPER, nurseryman of Uckfield, Sussex, at the age of 77 years.

CALCIUM CYANAMIDE AND NITRATE OF LIME.—From comparative trials of the manurial values of these newer nitrogenous fertilisers made at the Aberdeen and N. of Scotland College of Agri-

ing cut flowers, either for large bouquets or for vases. The flowers are very large, reaching, indeed, the great size of 8 inches in diameter, and are borne on stalks from 16 to 20 inches in length. The flower-stem, moreover, is so sturdy that it holds the flower upright, and the cut flower has good lasting qualities. The semi-double varieties are rampant growers, but they flower early and prolifically. They are raised easily from seed, and about 50 per cent. of the plants so raised come true to character. The remainder are single, but are of as good quality of flower as the ordinary single strains. The cultural methods recommended are similar to those in vogue for other classes; sowing in late March to middle April, raising the young plants singly in

12 were borne on as many shoots deprived of leaves and 12 were borne on shoots with their leaves intact. They find (*Journ. de la Soc. Nat. d'Hort. de France*, Nov., 1910) that the removal of the leaves resulted in the production of smaller and lighter fruits. Thus the 12 fruits borne on defoliated spurs weighed 1,265 grams, whereas the 12 borne on intact spurs weighed 1,560. The former also contained less sugar and were slightly more acid. Thus, as might be expected, the leaves in the immediate neighbourhood of a fruit contribute not inconsiderably to the sugar and other materials stored in that fruit, though the bulk of these substances are produced by the manufacturing activity of more distant leaves and pass through the stem, as elaborated sap, to the ripening fruits.

PUBLICATIONS RECEIVED.—*United States Department of Agriculture: Bureau of Plant Industry.* Bulletins: Experiments in Blueberry Culture, by Frederick V. Coville; Field Studies of the Crown-Gall and Hairy-Root of the Apple Tree, by George G. Hedgcock. *Bureau of Entomology.* Circulars: Insects which Kill Forest Trees, by A. D. Hopkins; Insects in their Relation to the Reduction of Future Supplies of Timber, and General Principles of Control, by A. D. Hopkins. Bulletins: Tests of Sprays against the Fruit Lecanium and the European Pear Scale, by P. R. Jones; Life History of the Codling Moth in North-Western Pennsylvania, by A. G. Hammar; The One-Spray Method in the Control of the Codling Moth and the Plum Curculio, by A. L. Quaintance, E. L. Henne, E. W. Scott, and R. W. Braucher. (Washington: Government Printing House).



FIG. 219.—MONUMENT ERECTED TO GREGOR MENDEL AT BRÜNN.

culture, and published in leaflet form (Leaflet No. 9), it appears that both calcium cyanamide and nitrate of lime are suitable nitrogenous manures for Potatoes, and may be used instead of the older fertilisers, sulphate of ammonia and nitrate of soda. Nitrate of lime serves as well as either of the latter manures for top-dressing Hay, but calcium cyanamide is not suitable for grassland.

SEMI-DOUBLE DAHLIAS.—Mr. G. BESOKÉ contributes an interesting article on semi-double or Pæony-flowered Giant Dahlias to *Möller's Deutsche Gärtner-Zeitung* (No. 48, December 3, 1910). According to Mr. BESOKÉ, the semi-double varieties are most serviceable for supply-

ing pots, and planting out after hardening in a cold frame. Of the varieties recommended by Mr. BESOKÉ, *Délice* appears to be a valuable novelty, both for garden decoration and for cutting purposes. Its flowers are of a silky texture, and light rose colour, shading off on the reflexed edges into a whitish lilac. From the excellent illustrations of this new French hybrid Dahlia, it would appear that the flower has all the charm which Mr. BESOKÉ ascribes to it.

LEAVES AND FRUIT.—With the object of determining the extent of the contribution made by the leaves borne of fruit-bearing spurs of Pears, Messrs GUSTAVE RIVIÈRE and GABRIEL BAILHACHE have compared 24 fruits, of which

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

ABUTILON THOMPSONII.—In regard to Mr. Brown's exceedingly interesting article in the issue of December 10, p. 427, the most important point is that it can now be made quite clear, independently of my information, what the true *A. Thompsonii* really is. Mr. Brown quotes the *Florist and Pomologist* that it "is evidently a sport from *A. striatum*." Evidence of the same kind is obligingly pointed out to me in the *Floral World* of 1871, p. 319, by one of my assistants, Mr. Melles, where there is a long quotation from Shirley Hibberd's *Beautiful Leaved Plants*, in which it is referred to *A. striatum*. We may rely upon observers of that early time, when there was nothing with which *A. Thompsonii* could be confused, therefore *A. Thompsonii* may be defined as the only one of the five or six *Abutilons* with golden variegation that possesses the precise characters of *A. striatum*, plus the variegation. The spurious *A. Thompsonii*, distinct as it is with flowers of different shape (I believe) and colour and venation, and with leaves really quite different, cannot be mistaken for the true plant. With regard to the point of rarity, and whether the true *A. Thompsonii* has been used for sub-tropical planting during these many years, I would simply remark that over a long period there was only this true *A. Thompsonii*, and that it was to be found practically in every garden. It was used generally for bedding, and although it was not sent me when recently I made enquiry for it, I am quite sure that it must still be cultivated in various parts of the country. I do not remember when it was absent in this garden, and I know it to be in two other gardens near by. Mr. Brown enquires whether the commonly-cultivated plant is a mere condition of the true *A. Thompsonii*, owing its pubescence and change in the colour of the flowers to having been annually subjected to an open air treatment for several years? To this I think there may be a very definite answer. The spurious *A. Thompsonii* may be a hybrid with the true *A. Thompsonii*, as Mr. Harry Veitch has suggested, but otherwise it has little or perhaps nothing to do with the very clearly-defined species to which *A. Thompsonii* belongs. The two plants are somewhat similar, as may be the case in any two of the same genus, but the spurious *A. Thompsonii* has characters that could not have come direct from the true *A. Thompsonii*. I am anxious to point

this out because a known change of the kind would greatly delight the evolutionist who believes in the direct influence of the environment upon the individual. He would, I am sure, be wrong in finding support for his views in this plant. There is indeed no reason to find the origin of the spurious *A. Thompsonii* in this way, any more than it is necessary to include the other golden variegated *Abutilons* under *A. striatum*. There is, for instance, the very distinct *A. vexillarium* (*A. megapotamicum*) also with fine golden variegation. Quite distinct species of *Abutilon* for some reason are liable to be variegated in the same way. That we know nothing about the origin of this spurious *A. Thompsonii* is hardly remarkable, since we know just as little about the origin of several others. We have forgotten who was responsible for the brilliant series of hybrids of *A. Darwinii* and others, although representatives are to be found in gardens at the present time. And the confusion of quite distinct plants is not unknown as, for instance, in the case of what I shall call the true *Lasiandra macrantha* and *Tibouchina semi-decandra*. The true *Lasiandra macrantha* is now exceedingly rare—and should be looked after like the picture of a great master—and both these were distributed, as one thing, about the same time by the same nurseryman. I do not suggest that these two *Abutilons* were sent out together in the same way. I do not think it was done. I am interested in *A. Thompsonii*, var. *flore pleno*. It is a variegated plant, and not the one that Mr. Brown has found at Kew under the name and which must now be known as *A. pleniflora*, *N.E.Br.* Without variegation it could not have been called *A. Thompsonii*, as that name indicates exclusively the golden form. I have not seen this double form for a very long time, and cannot say precisely what it is beyond the fact of its being quite similar to *A. Thompsonii* but with double flowers—hence the name. I should be very much obliged to anyone who could kindly send me cuttings of the true plant. I shall then have five or perhaps six of these golden forms, each one distinct from the other. I cannot agree with Mr. Brown in referring to *A. striatum* the third "*Thompsonii*" he has found at Kew, and to which he gives the varietal name *Kewense*. I have had apparently the same plant from Cornwall under the name *A. Thompsonii*, and that name was given to it when sent to Kew. That it should have been named *A. Thompsonii* is inexplicable, unless at Kew there happened to be the same plant with the name *Thompsonii* mistakenly applied. From what Mr. Brown says this appears to have been the case, and that he has found it there. Mr. Brown says he has not seen the flowers. The plant from Cornwall named at Kew *Thompsonii* (which I think must be the same) came to me with flowers. They are entirely unlike those of *A. striatum*; they are small and very peculiar, practically without veins, and of a reddish-brown colour. Next year I propose to have all these *Abutilons* growing together, and therefore I would now say nothing further about nomenclature, except that instead of applying the names *Thompsonii*, *Veitch*, and *Thompsonii*, *Hort.*, as Mr. Brown apparently permits, I would call the spurious *Thompsonii* by the further name *spurium*. If then it came to be *Abutilon spurium* it would not matter, but *Hort.* and *Veitch* as essential adjuncts to a name would not long be retained by gardeners. *R. Irwin Lynch.*

By the courtesy of the Editors, I have had the opportunity of reading the above note from Mr. Lynch before publication, and would remark thereon that my old friend (and perhaps others) appears to have misunderstood the meaning of my application to the plant now widely grown as *A. Thompsonii*, of the name "*A. striatum* var. (*A. Thompsonii*, *Hort.*)."
Botanically, this means that I consider the plant to be a variety (whether of hybrid origin or otherwise) of *A. striatum*, but do not give it a varietal name, that in parentheses being a synonym intended to indicate the plant meant, in contradistinction to "*A. Thompsonii* var. *Thompsonii*." I refrained from giving it a name, because I thought it likely that someone would be able to give information as to the origin of the plant, when something more definite might be said of it. According to Mr. Maine, we have knowledge of the false *A. Thompsonii* for about 30 years, whilst the true plant was introduced 12 years earlier. Surely someone must have knowledge of one or both

plants for as long or longer a time, and could throw some light upon the question of the origin of the false *A. Thompsonii*. Mr. Lynch may be quite right in believing it to be of hybrid origin, but as the wild plant, in its native country, varies in pubescence, &c., very considerably, a fact Mr. Lynch appears to have overlooked, it is not absolutely certain that the plant may not have done so here under open-air cultivation for a number of years. I do not gather from my friend's note that the Cambridge plant has been annually subjected to that treatment, and I do not insist that it would bring about such a result. The point to be explained is, how comes it that the false *A. Thompsonii* is now so widely cultivated to the exclusion of the true plant, and how has one replaced the other. The plant must either be a hybrid, a variation induced by open-air cultivation for a number of years, or a distinct plant introduced and distributed under the erroneous name of *A. Thompsonii* many years ago. Can no one give information concerning it in its early days? *N. G. Brown.*

ABUTILON SCHWARTZII.—I have now in bloom this white-variegated *Abutilon*, and I should much like to know its origin. In flower, it is similar to *A. striatum* or *A. Thompsonii*, but the flowers are longer and narrower in actual measurement, while in colour it seems to me almost identical with *A. Thompsonii spurium*—as I venture to name it. The leaves, in outline, are much like *A. striatum*, but the serrations are more acute. The relation of this plant to *A. striatum* might explain the relation of *A. Thompsonii spurium* to that central species—as we may term it. *R. Irwin Lynch.*

HARDY BAMBOOS AND MUTISIA CLEMATIS.—The interesting notes on hardy Bamboos (see pp. 396, 415) lead me to endorse the remarks as to the beauty of *Arundinaria nitida*, which makes a graceful and not too rampant clump. It certainly loses it leaves more than most of the other varieties, and this is not due to cold in all cases, for here in sheltered spots it loses them as freely as in the more exposed positions. *A. anceps* is much better in this respect, and it retains a fresh, green appearance all through the year; moreover, the plant has a very graceful appearance. For forming bold groups in moist dells *A. palmata* is most effective, for, although it may lack the gracefulness of the more slender growing species, it is very conspicuous in its deep green colour and bold foliage. *A. aurea* develops stout, feathery plumose growths that are very effective. *A. nigra* is most effective for contrasting with lighter green backgrounds, and, planted in a good position with plenty of room, it forms a fine clump. A viridi-glaucous presents a fresh green colour, sending up long culms that ramble freely. These are a few Bamboos that do especially well here. A correspondent recently stated in the *Gardeners' Chronicle* that a plant of *Mutisia Clematis* grew rampantly with him, but had not developed flowers. Our specimen here has since that was written stopped growing rampantly, and is showing flower-buds. It will be interesting to watch whether they will develop so late in the year, although *Cassia corymbosa*, *Habrothamnus elegans*, and *Cianthus puniceus* are still flowering freely in these gardens. *R. W. Norman, The Gardens, Heligan, St. Anstell, Cornwall, December 20.*

FRUIT-TREE STOCKS.—Mr. H. Somers Rivers' excellent paper upon fruit-tree stocks (see pp. 325, 444) touches a subject of interest to all fruit-growers. The question of selecting the most suitable stocks upon which to bud or graft the various kinds of fruit trees to produce the best results is of great importance in the successful cultivation of fruit trees. I am of Mr. Rivers' opinion that much confusion prevails about the Paradise stock; indeed, there appears to be a lack of knowledge generally with regard to the merits of the various kinds of fruit-tree stocks, and many are unable to distinguish one kind from another. It is evident from the very interesting extracts given by Mr. Rivers from old authors on fruit culture as far back as the 16th century, that careful attention was paid in those days in selecting suitable stocks upon which to work fruit trees. The surface-rooting, dwarfing Paradise stock was adopted for Apples, and the Quince was used as a stock for Pears; even the variety of Quince was given (see extract from

"Evelyn," in which he says the Quince stock is very sound and produce large leaves and fine shoots, and have smooth, shining, black bark). Mention is also made of certain Pears not doing on the Quince that may be regrafted, or double-worked, as we call it now. The French were undoubtedly in advance of growers in this country in the cultivation of fruit trees and Roses and in raising many fine fruits, notably varieties of Pears. They evidently knew the advantage of surface-rooting stocks for the production of early fruitfulness. But from a long experience, I have found many Continental varieties of stocks quite unsuited to this climate, notably the varieties of French Paradise and Doucin. They are too slow of growth, and have too much dwarfing influence. Many sorts of Apples worked upon them become stunted, and produce small fruits. A good variety of English Paradise is far preferable for most varieties of Apples, as the trees make good growth and produce fine fruit; moreover, the swelling at the junction of the graft is more even and less obstructive to the flow of sap. It is difficult to trace the origin of many fruit stocks. The Paradise was undoubtedly selected from seedling Apple trees that had surface roots. The late Mr. Thomas Rivers appears to have raised seedling Apples from which he selected two varieties for stocks, the Broadleaf and Nonesuch Paradise, both of which have proved excellent for the purpose. Messrs. Osborn & Sons had some old trees of an excellent variety of the so-called English Paradise at their Fulham nursery. I spent many days, 50 years ago, layering these for stock, and they must have been there 50 years before my time. They also had the best variety of "muscle" stocks called "Whitley's Muscle." I have found this variety identical with a very old Plum called "Muscle Plum," which was listed in former catalogues. It makes vigorous growth, fibrous roots, clean, smooth skin, and large, shiny leaves. Nearly all varieties of Peach, Nectarine, and Apricot do well grafted on it. It makes splendid, clean stems for trained trees. There are several varieties of "Muscle" stocks in existence, some being poor and almost worthless. The stock and scion should swell equally as much as possible, and I find "Whitley's Muscle" meets the condition better than any other. The sorts of Peaches and Nectarines that will not do on this stock I work on the "Brompton" stock, and Apricots on the Brussels. *Geo. Cannon, Edg.*

THE MILD SEASON.—The mildness of the weather this Christmas is evidenced by the appearance near Baginbun of a Hazel tree covered with catkins 2 inches long and fully expanded. Petasites fragrans and Anthriscus sylvestris are in bloom on a bank near by, while the glossy leaves of the wild Arum are already extended 6 inches. *H. S. Thompson, December 25.*

ABOUT SOME DIFFICULT ROSES.—There is a slip in my notes in last week's issue under this head. Mme. Lacharme is a white Rose; the "old Dijon Tea" of a brilliant lemon-yellow, erroneously referred to under this name, was the last Rose sent out by Lacharme. Many cultivators considered this Rose his masterpiece, but the name has, for the moment, escaped me. *R. P. S.*

SAXIFRAGA LANTOSCANA.—Respecting *Saxifraga lantoscana*, Mr. Farrer (see p. 474) agrees with our version of the form that was (*vide* Mons. Correvois in a previous issue) given to the world by Boissier under this name. Mons. Correvois is a personal friend of ours, and we were very anxious that nothing we had said should seem to cast aspersions upon his well-known botanical knowledge, so we sent him a rosette of his (Boissier's) plants a week ago, in order that he might pass his judgment upon it, and he replies that, so far as he can say after careful examination, it is identical with his own plants, and that, if it bears an upright stem with pedicels uniformly distributed all round, it must have been modified in habit by cultivation. We can only say that it flowered in this way the year we received it, whereas the *S. lingulata* which we had from him at the same time still retains the semi-pendant habit of inflorescence that it always exhibited and is exactly the same as the Kew plant of this name. It seems to us that, if this be the *lantoscana* as named by Boissier (and we accept Mons. Correvois's decision), then it follows, since

the man who first gives any new plant a name must be the authority for its nomenclature, that the plant Mr. Farrer and ourselves have in our minds as the true *S. lantoscana* (as given at Kew ought to be given some other name. We cannot call it *lantoscana superba*, because there is already a well-known form under that name. We can only concur most emphatically with Mr. Farrer that the "Boissier" version is a "terrible contrast" compared with the exquisitely lovely "Vésubie" form. *Heath & Son, Berkhamsted, Cheltenham.*

SCOTLAND.

PLANTING OF TREES IN GLASGOW STREETS.

WITH the object of improving the appearance of some of the broader Glasgow thoroughfares, such as the Great Western Road, by the planting of trees, a remit was made to the Superintendent

structing such greens in the Plantation Park, and the work of construction will be proceeded with immediately. In Dumfries, a public bowling green on the Dock Park was opened last summer, and this has been so successful that the Town Council has agreed to proceed with the formation of another green, which will be ready for use in the coming season.

DATURA SUAVEOLENS IN THE PLEASURE GARDEN.

DATURA SUAVEOLENS is a capital subject for cultivation in the border of a greenhouse or conservatory, but it may also be used for decorating the flower garden during the summer months, provided it is given a position which is sheltered from the prevailing winds. This species is frequently to be seen bearing the old name *Brugmansia suaveolens*. Its large, white flowers are very fragrant. In fig. 220 is shown a specimen in



FIG. 220.—*DATURA SUAVEOLENS* IN AN IRISH GARDEN IN SUMMER-TIME.

of Parks, Mr. James Whitton, and the Master of Works to report on the subject. It is a matter of regret that it has been found inexpedient to proceed with the work. The two gentlemen named have reported that the cost of the number of trees required, about 867 in all, together with that of the guards, gratings, &c., would amount to about £1,300. A still greater obstacle appears to be that the gas or electricity mains are generally laid in the lines in which the trees would be planted, and that their removal would involve great cost. In view of the report the Statute Labour Committee has come to the conclusion that it is inexpedient to proceed with the suggested improvements.

PUBLIC BOWLING GREENS.

THE provision of bowling greens in Scottish public parks is extending very rapidly, and quite a number are in process of formation or are contemplated. In Govan, the Burgh Parks Committee has approved of arrangements for con-

the pleasure grounds at Edenmore, Whiteabbey, near Belfast, the residence of Mr. Torrens. The plant was put out-of-doors at the beginning of June, the pot being plunged beneath the grass. The illustration, for which we are indebted to Mr. Isaac Smith, Macedon Gardens, Belfast, was taken on November 1, at which time 36 flowers were expanded.

SOCIETIES.

ST. IVES (HUNTS.) SHOW.

DECEMBER 19.—The annual farm, dairy produce, root, and fruit show was held in a large marquee in the Broadway, St. Ives, on this date. The occasion was market day, and the tent was crowded with visitors during the afternoon. The president is Mr. C. H. Coote, J.P., and Mr. G. H. Cannon, is the energetic secretary. There were 12 exhibits in the class for a single dish of cooking Apples, and such well-known varieties as Lane's

Prince Albert, Mère de Mènage, Bramley's Seedling, and Bismarck were grandly staged. All the prizes were awarded to Bramley's Seedling. Each dish was of exceptional merit, the fruits being large and finely-coloured. The prize-winners, in their order, were Messrs. J. LINTON, Stirlloe; T. KING, Colne; and M. N. DAY, Finterton. For a dish of Cox's Orange Pippin there were 11 entries. The 1st prize was awarded to G. HUNNYBUN, Esq., Godmansburton. R. M. COPLEY, Esq., Burghley Hall, St. Ives, was a good 2nd. There was not an inferior exhibit staged in this class. The 1st prize in the class for a dish of any other dessert Apple was won by Mr. C. COUSINS, who showed an exceptionally fine dish of Allington Pippin, Mr. R. M. COPLEY followed closely with Ribston Pippin. For three dishes of dessert Apples there were eight entries. Mr. J. F. HOOLEY showed remarkably fine specimens of Cox's Orange Pippin, Ribston Pippin, and Blenheim Pippin, and was awarded the 1st prize; 2nd, Mr. G. HUNNYBUN. In the class for a dish of 12 Apples, containing 6 varieties each of cooking and dessert varieties, Mr. C. COUSINS was placed 1st and Mr. R. M. COPLEY a close 2nd. The best exhibit of three dishes of dessert Pears as shown by Mr. T. LONGMAN; 2nd, Mr. F. F. HOOLEY. For a dish of five dessert Pears, Mr. T. LONGMAN, Warboys, was awarded the 1st prize for a magnificent dish of Doyenné du Comice. Kidney and Round Potatoes were well shown by numerous exhibitors, prizes being won by Messrs. C. H. COOTE, Houghton Grange; C. E. GIRLING, Hemingford; G. D. DAY, St. Ives; C. COUSINS, Croxton Park; and E. E. CHAMBERS, St. Ives. Onions were remarkable for their size and high finish. Messrs. C. COUSINS, J. F. HOOLEY, and F. GOLDING won the 1st, 2nd and 3rd prizes in the order of their names.

THE WEATHER.

THE WEATHER IN WEST HERTS.

Week ending December 21.

Another persistently warm, wet, and gloomy week.—Each of the last 17 days has been warm for the time of year, and during the same period there occurred only one unseasonably cold night. If we except one day when the highest reading in the thermometer screen was 45°, the temperature from day to day throughout those 17 days was remarkably steady, the maxima reading ranging only between 48° and 58°—or a difference of only five degrees. The ground is still three degrees warmer at two feet deep, and as much as five degrees warmer at one foot deep, than is seasonable. Since the beginning of the month rain has fallen on all but three days, and to the total depth of five inches, which is about twice the average rainfall for the whole of December. During the same three weeks 26 gallons of rainwater have come through the bare-soil percolation gauge, and 25 gallons through the gauge on which short grass is growing—or practically the whole of the rainfall. Since the beginning of the month there have been altogether only seven-and-a-quarter hours of sunshine, and on 10 days none at all was recorded. The brightest day of the month as yet was the 18th, when the sun shone for two hours, fifty minutes. The winds were, as a rule, rather high, and in the windiest hour the mean velocity amounted to 21 miles—direction S.W. The average amount of moisture in the air at three o'clock in the afternoon exceeded a seasonable quantity for that hour by one per cent. *E.M., Berkhamsted, December 21, 1910.*

Week ending December 28.

Another warm week, and the fourth in succession.—During the last 24 days there has been only one unseasonably cold day, and but four cold nights. On the coldest night, however, which occurred during the past week, the exposed thermometer registered 14° of frost. The ground temperatures have fallen rather rapidly the last few days, and are now only 1° warmer at 2 feet deep, and of about seasonable warmth at 1 foot deep. Rain has fallen on all but five days during the present month, and to the total depth of nearly 5½ inches, or more than 3 inches in excess of the average quantity for the whole of December. In the same four weeks 29 gallons of rainwater have passed through the bare-soil percolation gauge, and 28 gallons through that on which short grass is growing. The sun shone on an average during the week for 1 hour 48 minutes a day, which is about 20 minutes a day in excess of the usual duration at this period in December—making this the first unseasonably bright week recorded here for five weeks. The winds were again as a rule rather high, but in no hour did the mean velocity exceed 19 miles—direction W.S.W. The average amount of moisture in the air at 3 p.m. fell short of a seasonable quantity for that hour by 5 per cent. *E.M., Berkhamsted, December 28, 1910.*

GARDENING APPOINTMENTS.

MR. WILLIAM DAVIDSON, for the past 3½ years General Foreman in the gardens at Moulton Paddocks, Newmarket, as Gardener to Sir WILLIAM EDEN, Bart., Windlestone Hall, Ferry Hill, Durham.

MR. W. FRANKLIN, for the past 3 years Carnation Grower at Porter's Park, Shenley, as Carnation Grower at Granley Hall, Ripon, Yorkshire.

MR. HENRY H. JONES, for several years Gardener at Ditton Park, Slough, as Gardener to CAPTAIN M. HILL, Westwood House, West Beigholt, Essex.

MARKETS.

COVENT GARDEN, December 28.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in one day.—Eds.]

Cut Flowers, &c.: Average Wholesale Prices.

s.d. s.d.	Narcissus Paper	s.d. s.d.
Anemones (French), per dz. bunches	White, per pad	9 0-12 0
Arums (see Richardias)	Soleil d'Or, per doz. bunches	4 0-6 0
Azaleas, white, per dozen bunches	Orchids, Cattleya, per doz.	10 0-12 0
Camellias, per doz.	Cypripediums, per doz. blooms	3 0-4 0
Carnations, p. doz. blooms, best American varieties	Odontoglossums, per dozen blooms	2 6-3 0
— smaller, per doz. bunches	Pelargoniums, Zonal, double scarlet	6 0-8 0
Chrysanthemums, per doz. bunches	Poinsettias, per doz. heads	6 0-10 0
— larger per doz. blooms	Ranunculus, double yellow, per doz. bunches	4 0-6 0
— specimen blooms, p. doz.	Richardias, per doz. blooms	4 0-5 0
Gardenias, p. doz.	Roses, 12 blooms, Niphetos	2 6-3 0
Hyacinth (Roman), p. doz. bunches	— Bridesmaid	2 0-3 0
Lageria, white, per dozen	— C. Metmet	2 0-3 0
Lilium auratum, per bunch	— Liberty	2 0-3 0
— longilorum	— Mme Chateaux	3 0-5 0
— lancifolium rubrum	— Richmond	2 0-3 0
— lancifolium album	— Sunset	2 0-3 0
Lily of the Valley, p. doz. bunches	— The Bride	2 0-3 0
— extra quality	Tuberose, p. gross	4 0-5 0
Marguerites, doz. bunches, white	— per doz. blooms	0 5-0 6
— per doz. bunches, yellow	Tulips, per bunch or doz.	0 6-0 9
Mimosa, per pad	— Violets, per doz. bunches	2 0-3 0
	— Parma, bunch	3 6-4 0

Cut Foliage, &c.: Average Wholesale Prices.

	s.d. s.d.	Ferns, p. dz. bchs. (French)	s.d. s.d.
Adiantum cuneatum, per dozen bunches	5 0-8 0	Haidy foliage (various), per dozen bunches	8 0-5 0
Asparagus plumosus, long trails, per doz. bunches	8 0-6 0	Ivy-leaves, bronze	2 6-3 0
— medium, doz. bunches	6 0-9 0	— long trails per bundle...	1 6-2 0
— Sprengeri	6 0-9 0	— short green, per dz. bunches	1 0-2 0
Berberis (Mahonia), per dz. bunches	2 6-3 6	Moss, per gross	4 0-5 0
Croton leaves, per dozen bunches	6 0-9 0	Myrtle, dz. bchs. (English), small-leaved...	4 0-6 0
Ferns, p. dz. bchs. (English)	4 0 —	— French	1 6-2 0

Plants in Pots, &c.: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
<i>Aralia Sieboldii</i> , p. dozen	5 0-6 0	<i>Euonymus</i> , per dz., in pots	4 0-8 0
— larger specimens	9 0-12 0	<i>Euonymus</i> , from the ground	3 0-6 0
— Mosses	6 0-8 0	Ferns, in thumbs, per 100	8 0-12 0
— larger plants	9 0-15 0	— in small and large 60's	12 0-20 0
<i>Araucaria excelsa</i> , per dozen	12 0-30 0	— in 48's, per dz.	5 0-8 0
— large plants, each	3 6-5 0	— choicer sorts, per dozen	8 0-12 0
<i>Asparagus plumosus</i> , per dozen	9 0-12 0	— in 32's, per dz.	10 0-18 0
— Sprengeri	6 0-9 0	<i>Ficus elastica</i> , per dozen	9 0-12 0
<i>Aspidistras</i> , p. dz., green	15 0-24 0	— repens, per dozen	5 0-6 0
— variegated	24 0-36 0	— dozen	5 0-6 0
<i>Begonia Gloire de Lorraine</i> , p. dz.	8 0-12 0	<i>Isolepis</i> , per dozen	4 0-5 0
— Turnford Hall, white	12 0-24 0	<i>Kentia belmoreana</i> , per dozen	15 0-21 0
<i>Chrysanthemums</i> , in pots	9 0-12 0	— <i>Fosteriana</i> , per dozen	18 0-24 0
— specials	18 0-24 0	<i>Latania borbonica</i> , per dozen	15 0-18 0
<i>Cocos Weddelliana</i> , per dozen	18 0-30 0	<i>Lilium longiflorum</i> , per dz.	12 0-18 0
<i>Crotons</i> , per dozen	12 0-18 0	<i>Marguerites</i> , white, per dozen	6 0-8 0
<i>Cyclamen</i> , per doz.	9 0-12 0	<i>Poinsettias</i>	8 0-15 0
<i>Cyperus alternifolius</i> , per doz.	5 0-6 0	<i>Selaginellas</i> , per dozen	4 0-6 0
— laxus, per doz.	4 0-5 0	<i>Solanums</i> , per dozen	8 0-10 0
<i>Erica gracilis</i> , p. dz.	9 0-12 0	— dozen	8 0-10 0
— <i>gracilis nivalis</i>	9 0-12 0	<i>Spiraeas</i> (pink)	12 0-18 0
— <i>hyemalis</i>	10 0-15 0	— (white)	6 0-9 0

Fruit: Average Wholesale Prices.

	s.d.	s.d.			s.d.	s.d.
Apples (American), per barrel:			Apples (Nova Scotian), per barrel:			
— Greening	...	22 0 —	— Ribston Pippin	22	0-24	0
— Baldwin	...	22 0 —	— Spy	...	23	0 —
— York Imperial	...	22 6-24 6	— Spitzenburg	...	23	0 —
— Albemarle	...	24 0 30 0	— Leeks	...	24	0 —
— (Nova Scotian), per barrel:			— Blenheim Pippin	...	23	0 24 0
— King of the pippins...	...	23 0-24 0	— Baldwin	...	23	0 —
— Wine Sap	...	10 0-12 0	— Greening	...	22	0 —

Fruit: Average Wholesale Prices (continued).

	s.d.	s.d.			s.d.	s.d.
Apples (Californian),			Grapes (English),			
Newtown Pippin, per case,			Almeria (tinted),			
4 tiers...	8	6-10 0	per barrel	12	6-41 0	
— 4 tiers...	6	6-8 0	Lemons:			
— (Oregon), New-			— Malaga (420)	15	0-90 0	
town Pippin...	10	6-12 6	— Messina (300)	15	6 —	
— Yakima	10	6-12 6	Mandarines, p. box			
— (Wenatchee			25's	1	0-1 6	
Valley), Wine			Melons, Spanish			
Sap, per case	8	0-10 6	Bronze (24's)	14	0 —	
— Jonathan	8	0-10 6	Nuts, Almonds, p.			
— Grimes Golden	8	0-10 6	bag	36	0-42 0	
— Spitzenberg	8	0-10 6	— Chestnuts (Italian),			
— Ark Annas	8	0-10 6	per sack	21	0-22 0	
— Rome Beauty	8	0-10 6	— (Redon), per			
— Black Twig	8	0-10 0	bag	12	6-14 6	
— Baldwin	8	0-10 6	— Brazils, new,			
— (English) Cox's			per peck	3	0 —	
Orange Pippin,			per cwt	48	0 —	
1/2 bushel	7	6-12 0	— sorted	55	0 —	
— Bramley's			— Barcelona, per			
Seedling, per			bag	32	0-34 0	
bushel...	6	6-8 0	— Cocoanuts (100)	10	0-14 0	
— Blenheim Pippin,			— English Wal-			
per bushel	5	6-7 0	nuts, p. dz. lbs.	7	0-8 0	
— Wellington, pr.			— Doubles, per			
bushel...	8	0 —	doz. lbs.	12	0-18 0	
Bananas, bunch:			— (French), Gre-			
— Doubles	11	0-14 0	nobles, bags	9	6-10 0	
— No. 1	9	0 —	— English Coles			
— Extra	10	0-11 0	per lb...	0	10-1 0	
— Giant	13	0 —	— shelled, 1 lb.			
— Red coloured	4	0-5 6	box of Walnuts	1	4 —	
— Red Doubles	8	0-9 0	— 1 lb. by Barcelona	9	—	
— Loose, per			Oranges (Jamaica),			
doz.	0	6-1 0	per case (352)	10	0 —	
— Jamaica (per			— (300)	10	6-12 0	
bunch),			— (216)	11	6 —	
— Giants	6	0-7 0	— Dema	12	6-16 6	
— Loose, per			— New (Guaracha),			
dozen	0	5-0 6	per case (420)	21	0 —	
Cranberries, per			— (714)	12	6-15 6	
case (30 qts.)	9	6-10 6	— Jaffa, case (114)	8	6 —	
Dates (Tunis), per			Pears (Californian),			
doz. Cartons	4	9-5 0	per case:			
Grape Fruit, case:			— Glen Moreau	12	6 —	
— 96's			— Winter Nelis	17	0-20 0	
— 80's			— Easter Beurré	9	6-10 6	
— 64's			— Duxenne du			
— 54's	12	0 —	Comice	22	6 —	
Grapes (English),			— (French), cases	3	0-8 6	
per lb.:			— Catillac, 1/2 sieve	3	6-4 6	
— Black Alicante	0	8-1 0	— (Dutch), stew-			
— Muscat of Alex-			ing Molliés, per			
andria	1	8-2 6	1/2 sieve...	3	6-4 0	
— Canon Hall Mus-			Persimmon, pr box	1	6-2 0	
cat	2	6-4 0	Pineapples,	2	0-3 0	
— Gros Colmar...	1	0-1 9	Pomegranates, per			
— Black Alicante			case	1	9-2 3	
(Guernsey)	0	4-0 6	Quinces, per 1/2			
			sieve	6	0 —	

Christmas Fruits and Preserves.

	s.d.	s.d.		s.d.	s.d.
Figs, 1lb. packets,			Nuts, Monkey, hand-		
per doz. ...	5 0	—	picked, per bag	22 6	—
— boxes, per doz.	3 0	5 0	Dates, per cwt.		
— Natural, p. cwt.	27 6	—	— (Lair) ...	9 9	—
— Taps, per cwt.	23 6	—	— (Kadrowie)	11 3	—
Nuts, Brazils, best,			— (Hallowe)	12 6	—
hand-picked,			Metz Fruits, p. dz.		
per cwt. ...	65 0	—	— 1 lb. boxes	3 9	—
— Barcelona,			— 1 lb. boxes	6 6	—
hand-screened,			— 1 lb. boxes	10 0	—
per bag ...	37 6	—	Mixed Fruits, per		
— Almonds (Mont-			dozen ...	8 3	—
ague), per bag	48 0	—	Plums (Carlsbad),		
— (Lutza), p.			1 lb. boxes, per		
bag ...	44 0	—	dozen ...	9 0	—

Vegetables: Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Artichokes (Globe),			Mushrooms, p. lb.	0 10	1 3
— per dozen	16	2 0	— broilers	0 10	1 0
— (ground) 1/2 sieve	0 9	1 0	Mustard and Cress,		
— per bag	3 6	—	— per dozen packets		
Aubergines, doz.	16	2 0	— nets	0 6	0
Asparagus, Paris			Onions, Dutch,		
Green	30	4 6	— bags	4 0	—
Beans, Broad			— New Spanish,		
(French), p. pd.	26	3 6	— case	7 0	8 0
— per packet	16	1 8	— (English) bag	5 6	6 6
— Jersey, per lb.	16	2 6	— Shallots, per		
Beetroot, bushel	10	1 6	— lb.	0 2	0 3
Cabbages, tally	4	0	— Pickling, 1/2		
Carrots (English) —			— sieve	2 0	3 0
— cwt.	2	0	— Rhubarb	2 0	2 6
— dirty	1	6	— Parsley, 1/2 sieve	1 0	1 6
— (French), per			Peas (French), per		
dozen bunches	40	5 0	— pd.	4 6	5 0
Cauliflowers, ham-			— Guernsey, lb.	1 0	2 6
per	20	2 6	Seakale, bundle	1 0	1 4
Celery, per dozen	40	8 0	Sprouts, 1/2 bushel	1 0	1 6
Chicory, per lb.	0 3	4	— bags	2 0	2 3
Corncocks (Indian			Tomatoes —		
corn)	13	1 6	— (Canary), per		
Cucumbers, p. doz.	13	0 18 0	— bundle of 4		
Endive, per dozen	0 6	0 9	— cases	8 0	15 0
Herbs (sweet), pack-			Turnips —		
ets, per gross	7	0	— (French)	4 0	5 0
Horseradish, 12			— unwashed, per		
bundles	10	0 18 0	— bag	2 0	2 6
Lettuce (French),			— washed	2 3	2 6
Cos, per dozen	16	2 0	Watercress, p. dz.		
Mint, p. doz. bchs.	2	0	— bunches	0 6	0 6 1/2

REMARKS.—Apples of all kinds are meeting with a steady demand, and prices are firm. Pears are a limited supply. Many growers are finishing their crops of Grapes this week, and prices show a slight increase. The Nut trade shows an improvement in all sections, there being a good demand for selected samples. Californian Seedless Oranges have met

with a ready sale at remunerative prices. Pineapples have sold well this season. The Vegetable trade generally is quiet: the market is overstocked with Brussels Sprouts and Cauliflowers. E. H. R., Covent Garden, December 29, 1910.

Potatoes.

per cwt.	per cwt.
Kents—	Lincolns—
British Queen	British Queen
Up-to-Date	Up-to-Date
Bedfords—	Maincrop
Up-to-Date	Blacklands
British Queen	Dunbars—
Lincolns—	Up-to-Date
King Edwards	Maincrop
Evergoods	

REMARKS.—As anticipated, trade is very quiet this week. Prices remain about the same, and stocks in London are still heavy. Edward J. Newborn, Covent Garden and St. Pancras, December 28, 1910.

COVENT GARDEN FLOWER MARKET.

The supplies at Christmas were fully equal to all demands, and prices were not exceptional. Many salesmen have stores in the neighbourhood of Covent Garden where flowers can be purchased after the close of the market, and buyers do not trouble very much about attending early. This morning (Wednesday), though there were but quite such large quantities as usual, almost any flower obtainable at this season could be procured after the close of the market. Supplies of Chrysanthemums hold out well, although some growers have finished with them for the season, and prices may advance. This year the prices of Chrysanthemums have been disappointing to growers, especially during the early part of the season; and they have not been much better for the late varieties. Roses, with the exception of good white blooms, continue to be well supplied. "Liberty" and "Richmond" are both good; the latter seems to be taking the place of the former variety, and the old favourite, General Jacqueminot, suffers neglect, though this sort has a rich perfume, which is absent in many others. Catherine Mermet remains the best Rose of its colour for mid-winter blooming. Good yellow Roses are scarce. Forced bulbs are prominent. Tulips are good in white, yellow, and red varieties; many are sent to market in boxes. Liliums, as usual, were dearer during Christmas week, but high prices are not likely to be sustained. Richardias also advanced in value to a slight extent, yet they were procurable after the close of the ordinary flower market. Lily of the Valley varies but little, the supplies being equal to all demands, and the quality remains good. Gardenias are rather scarce.

Cut foliage, including Ruscus aculeatus (Butcher's Broom) and large quantities of Mahonia aquifolia (Berberis), is well supplied. The dyed Berberis is not suitable for use with flowers, as it stains them.

POT PLANTS.

Good Chrysanthemums are becoming scarce, and those on sale require to be purchased with care, as some are far advanced in blooming. Begonia Gloire de Lorraine is procurable in well-flowered plants of various sizes. Cyclamens are seen, but they are not so well flowered as usual. Well-flowered plants of Erica hyemalis have been plentiful and supplies promise to hold out for some time, but Erica gracilis autumnalis is nearly over for the season. Roman Hyacinths, in pots and in boxes, are procurable at prices a little above those quoted for the cut blooms. In foliage plants there is but little variation to record. The forced variegated Funkias show more white in the foliage than when grown under natural conditions. Ferns and Palms of all sizes are well supplied. Aspidistras sell for good prices, especially those with freely variegated leaves. Ficus elastica is not so popular as it was some years ago for dwelling rooms, yet good plants command fairly high prices. Euonymus, in various sizes, and other hardy foliage plants are seen on many stands. Conifers grown in pots last well, but those taken up from the ground and potted, drop their foliage soon in a dry atmosphere; consequently experienced decorators avoid using them as much as possible. A. H., Covent Garden, December 28, 1910.

CATALOGUES RECEIVED.

SEEDS.

W. LAING, Sutton, Surrey.
CLIBRANS, Altrincham.
DICKSON & ROBINSON, Cathedral Street, Manchester.
T. METHVEN & SONS, Edinburgh.
STEWART & CO., Edinburgh.
W. J. WATSON, Ltd., Newcastle-upon-Tyne.
Sir JAMES W. MACKEY, Dublin—Garden Manual.
GEORGE FAIRBAIRN & SONS, Carlisle.
DICKSON, BROWN & TAIT, Manchester.
DICKSONS, Chester.

MISCELLANEOUS.

ISAAC GODBER, near Bradford—Chrysanthemums.

FOREIGN.

SLUIS & GROOT, Enkhuizen, Holland—Vegetable, Flower, and Agricultural Seeds.
CARL BECK & CO., Quedlinberg, Germany—Seeds.

TRADE NOTICE.

MESSRS. STANLEY & CO.

Mr. H. Stanley, formerly of Messrs. Stanley & Co., Orchid Specialists, Southgate, has no interest in this business, having severed his connection with the firm on December 20.

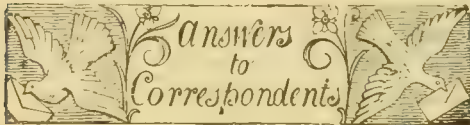
DEBATING SOCIETIES.

READING GARDENERS'.—The final meeting of the autumn session took place in the Abbey Hall, on Monday, December 12; the vice-president, Mr. Leonard Sutton, J.P., occupied the chair. After the minutes of the last meeting had been read, the nomination of officers for the forthcoming year was proceeded with, in view of their election at the annual general meeting, to be held early in January. Mr. W. J. Townsend, The Gardens, Sandhurst Lodge, was to have delivered the lecture on this occasion, but he was unable to be present, and the paper he had prepared was read by his son, Mr. F. Townsend, the subject being "Flowering Trees and Shrubs." The members of the association have, on several occasions, enjoyed the hospitality of Sir W. Farrer, at Sandhurst Lodge, where the beautiful collection of flowering shrubs, in combination with bulbs and other charming spring flowers, always prove a delightful feature in the early months of the year. The lecture was illustrated by a selection of lantern slides prepared by Mr. Townsend. The exhibition held by the association on November 23 yielded a profit of £144s., which sum has been equally divided between the Gardeners' Royal Benevolent Institution and the Royal Gardeners' Orphan Fund.

GUILDFORD AND DISTRICT GARDENERS'.—Mr. H. Tann presided at the meeting held on December 15. A paper on "Violets" was read by Mr. F. W. Wise, of Loseley Park Gardens. Mr. Wise has on several occasions staged excellent exhibits of these fragrant flowers at the association's meetings. A discussion followed the reading of the paper.

CHELMSFORD & DISTRICT GARDENERS'.—The last meeting of the 1910 session was held at the County Laboratories, Chelmsford, on December 16. Mr. G. Stewart, principal of the Laboratory, presided. Mr. J. C. Grimwood, of the Colchester Gardeners' Association, read a paper on "Plant Diseases and Pests." In his opening remarks the lecturer dealt with the habit of growth of a fungus, and the manner in which it affected the growth of a plant. Lantern slides were used to illustrate the paper. The life-histories of some insects which attack garden plants, were described and illustrated by means of lantern slides.

WARGRAVE & DISTRICT GARDENERS'.—The last meeting of the autumn session took place on Wednesday, December 21. The nominations of the officers and committee for 1911 were first taken, and then the chairman introduced Mr. F. Townsend, of Hillside Gardens, Reading, who gave a paper on the "Chinese Primula," the remarks being illustrated by means of lantern slides. The points dealt with in the paper included the history of the Primula; and its cultivation.

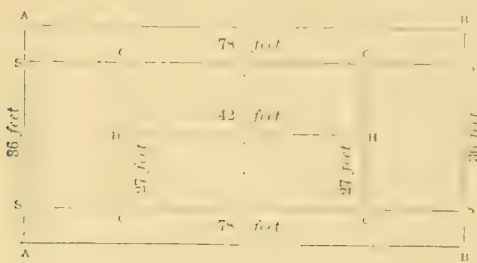


••• The Editors will be glad to receive, for consideration, large photographs of horticultural subjects, suitable for reproduction as Supplementary Illustrations in this Journal.

BOOK: *C. G. A. The Encyclopædia of Gardening*, by T. W. Sanders, price 3s. 10d., free by post. The work can be obtained from our publishing department.

CORRECTION: FORGOTTEN FORAGE PLANTS. In the article by Dr. Perez (see p. 389), on "Forgotten Forage Plants," *Cajanus judicus* should read *Cajanus indicus*.

TENNIS COURT AND CROQUET LAWN: *A. W. D.* The following particulars for laying out tennis and croquet grounds are taken from the new edition of *The Calendar of Garden Operations*:—Tennis court: The

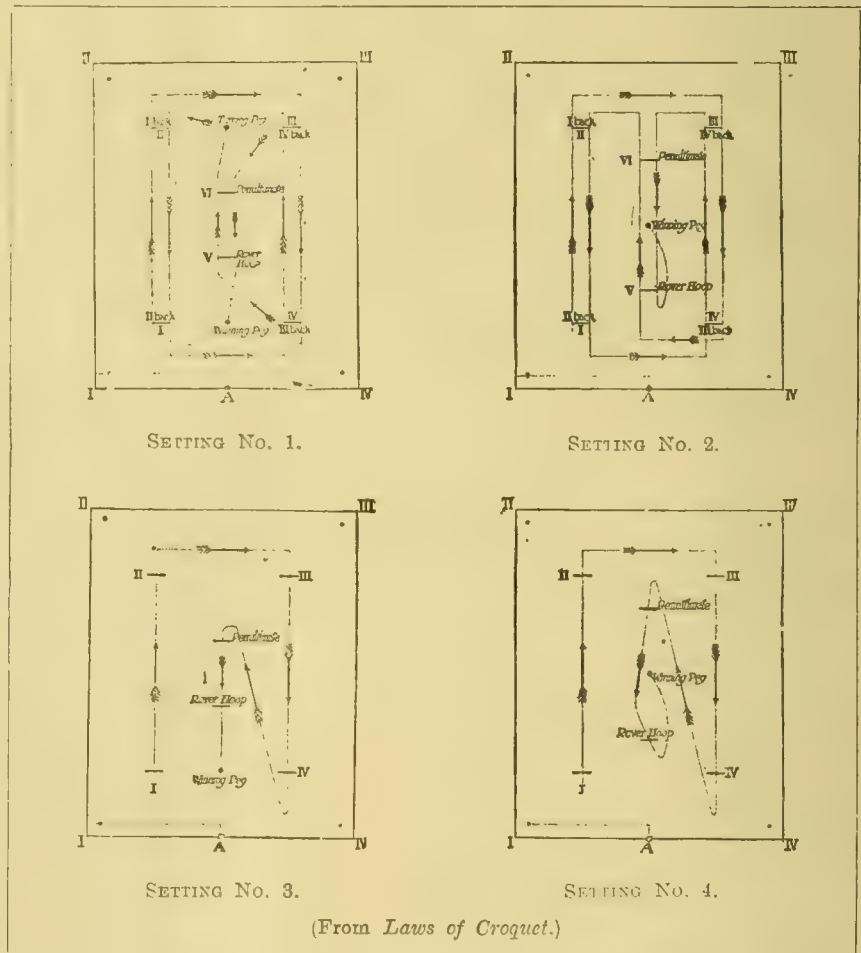


PLAN FOR TENNIS COURT.

lines AB and BA indicate a double court for three or four players; SS, SS, a single court for two players; AA and BB are the base lines; CC and CC, service lines; HH, half-court line; NN, net. A court for the single game is 27 feet wide and 78 feet long; and for the double game 78 feet long and 36 feet wide. The posts for supporting the net should

be placed 3 feet beyond the sides. The service lines run parallel to the net, and are 21 feet distant from the same. The net should be 3 feet high in the centre and 3 feet 6 inches at the posts, which are put 2 or 3 feet outside the line, to allow of the net dropping.—*Croquet lawn:* The following particulars show the present regulations of the Croquet Association: The ground shall be rectangular, 35 yards in length by 28 yards in width, with a defined boundary. A flag shall be placed at each corner, and corner spots, 3 feet from both boundaries, shall be accurately defined. Points on the boundary 3 feet from each corner flag, shall be marked by white pegs, not exceeding $\frac{3}{4}$ inch in diameter and 3 inches above the ground. The baulk (see diagrams) shall also be defined. The hoops shall stand 12 inches out of the ground, outside measurement, and be firmly fixed. The crown shall be straight and at right angles to the uprights, which shall be not less than $3\frac{3}{4}$ inches or more than 4 inches apart (inside measurement) from the ground

MANURES FOR CHRYSANTHEMUMS: *Lancashire.* The mixing of manures for soil composts will be understood most easily if we direct that so much manure shall be used to each barrow-load or three bushels of soil rather than to any particular thickness of turf. As a rule, when writers recommend certain quantities to be used to the square yard they refer to top dressings or applications for digging into the ground rather than for loose composts intended for potting purposes. (1) At the time of chopping up the turf for Chrysanthemum growing, add to each barrow-load or three bushels of soil 1 quart of bonemeal; this is preferable to dissolved bones, because it is free from sulphuric acid, which, in certain soils, is injurious to the plant roots. Also add 6 ounces of sulphate of potash, 1 lb. of basic slag, or 1 lb. of double superphosphate and 1 peck of soot. If the soil is light and sandy, add $\frac{1}{2}$ a bushel of decayed horse and cow manure. (2) The soil used for the final potting should be prepared some time before using in order that the ingredients may





A SNOW SCENE IN A YOKOHAMA NURSERY.

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